



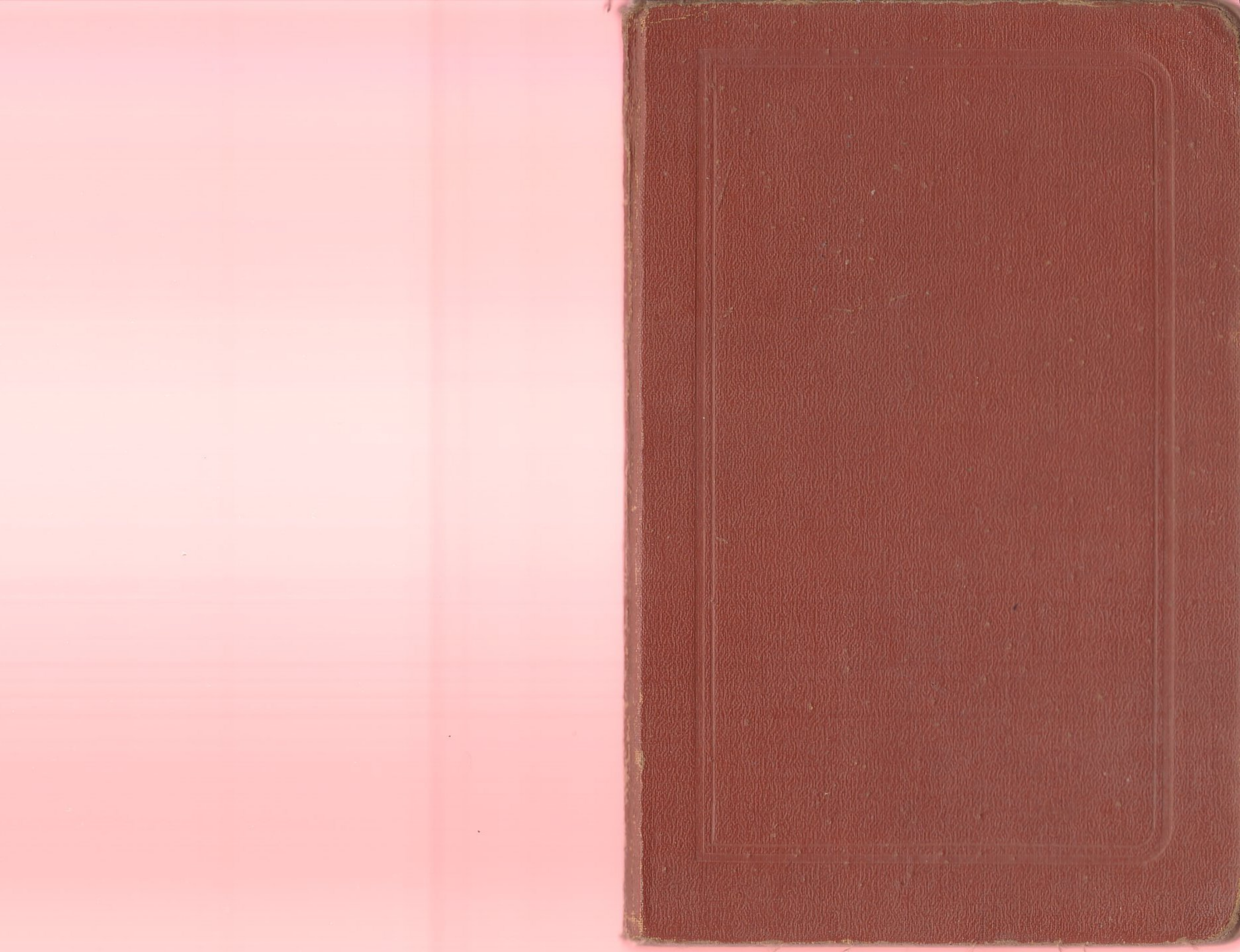
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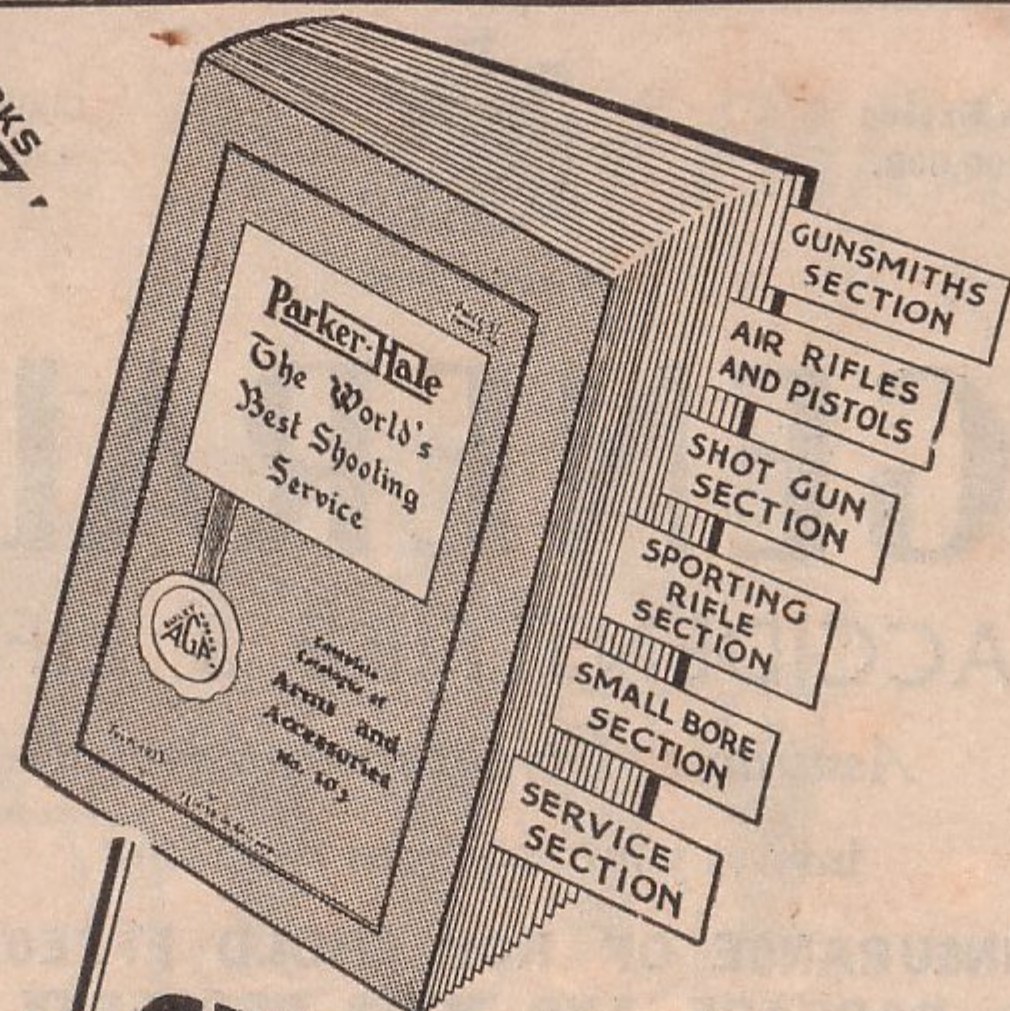
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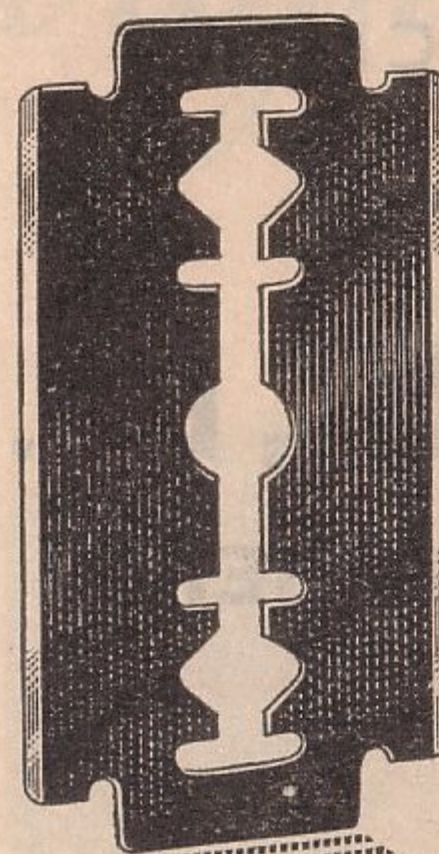
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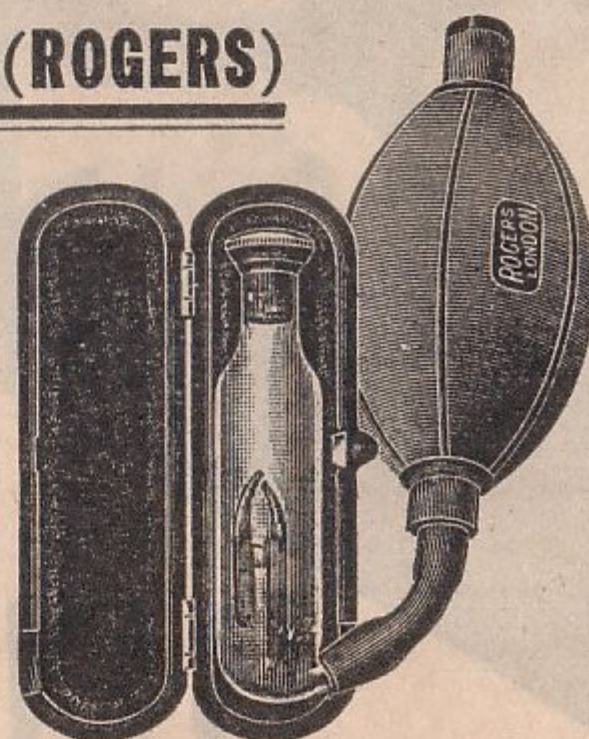
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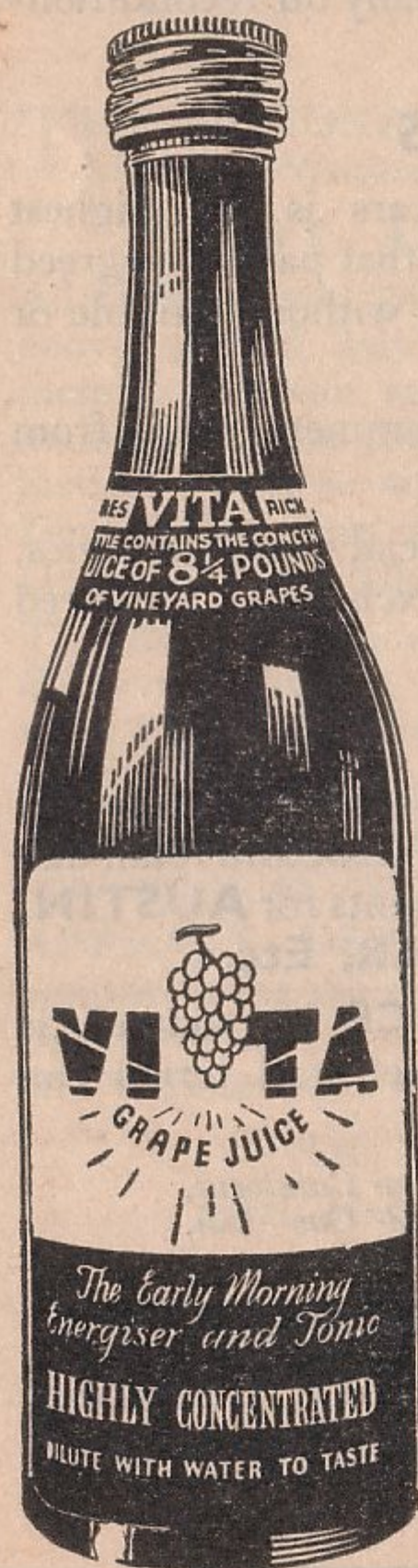
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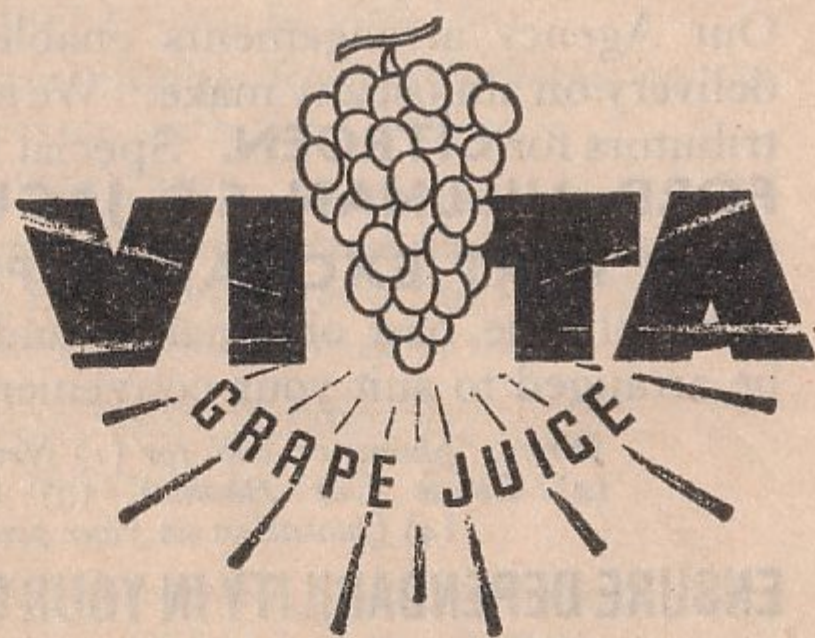
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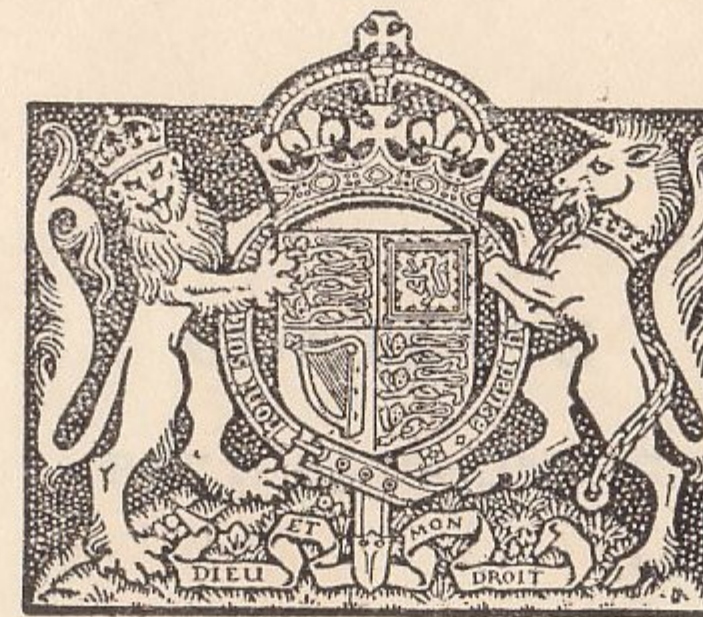
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1937

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PREFACE

1. This manual covers a period of transition.

Many infantry battalions have only recently been re-organized, or are still in process of re-organization, as rifle and machine gun battalions, while others are still organized as mixed battalions. The new weapons and vehicles, with which the infantry is to be armed and equipped, have either not yet been issued to the troops, or have only been provided on a limited scale. There has, therefore, been little opportunity for studying the changes in the methods of training in peace, and leading in war, that may be necessitated by re-organization, mechanization and re-armament.

While, therefore, it is considered advisable to provide some guidance on these matters, based on such experience as has been gained up-to-date, it is realized that further experience is needed before final conclusions can be reached, and that it will be necessary to issue a revised edition of this manual in about two years' time.

2. A list of the manuals, etc., common to all arms and of the principal manuals of each individual arm is contained in the Preface to Field Service Regulations, Vol. II.

The manuals peculiar to infantry are :

Serial No. (1)	Manual (2)	Nature of Contents (3)
1	Infantry Training.	The organization, drill, training and tactics of infantry.
2	Infantry Section Leading.	The organization and leading of the section.

DEFINITIONS

Barrage.—A curtain of fire in front of the infantry. A creeping barrage is one that moves gradually in front of the advancing infantry. A box barrage is one that is put down on the flanks and rear of any area of ground in order to isolate it.

Berm.—The distance between the edge of an excavation and the mound formed of the excavated earth in a defence work.

Blockhouse.—A small shelter made of concrete, wood, or stones, etc.

Bombardment.—A heavy concentration of artillery or mortar fire on defensive positions.

Bound.—A movement from one tactical position to another or the tactical position reached at the end of a movement.

Breastwork.—A defence work of which the greater portion of its height is above ground level.

Camouflage.—Any artificial means employed to deceive the enemy's visual or photographic observation from the ground or from the air.

Column.—Bodies of troops one behind the other at such distance from one another that a wheel of 90 degrees to either flank will bring them into line maintaining the regulation intervals.

Column of route.—A column of fours (or threes) with not more than four (or three) men abreast in any part of the column, including officers and supernumeraries. Column of route is the normal formation for troops marching on a road.

Communications.—Roads, railways, paths, tracks, waterways, sea and air routes.

Connecting file.—A single man or men in pairs specially detailed to assist a detached body in keeping touch with its main body.

Consolidation.—Making captured ground secure against attack by careful organization of the troops and by the provision of protection.

Covering.—i. The act of a body placing itself directly in rear of another.

ii. The act of a body placing itself in front, on a flank or in rear of another for protective purposes.

iii. The act of protecting or assisting the movement of a body of troops by means such as fire, readiness to fire, etc.

Covering fire.—Fire by units and arms to engage the enemy's attention and force him to seek cover in order that other units or arms may advance or retire.

Deploy, to.—To extend a formation or unit into a more open formation.

Directing battalion (company, platoon, section or file).—The battalion (company, platoon, section or file) responsible for keeping direction in a movement.

Drill.—The training of the soldier to execute certain movements as a second nature.

Enfilade fire.—Fire which sweeps a position or body of troops from a flank.

Field of fire.—The area of ground exposed to the effective fire of a given number of men or group of guns.

Fire control.—The necessary arrangements and orders for hitting the target.

Fire direction.—The term applied to instructions given by the commander of more than one fire unit to the fire unit commanders, as to how their fire is to be applied.

Fire plan.—The arrangements made by a commander to ensure that the fire of all the weapons of which he disposes is co-ordinated and directed in accordance with his intention.

Fire step.—A recess or ledge made or left in the face of a trench so that a man standing on it is enabled to fire over the parapet.

Fire unit.—Any number of men firing by the executive command of one. The section is the normal infantry fire unit.

Flam.—Two strokes on the drum beaten in very quick succession, the second stroke being louder than the first. A double flam is this repeated with a very slight pause between each flam.

Formation, battalion (company, platoon, section or file).—The battalion (company, platoon, section or file) on which a change of formation is based.

Forward slope.—The side of a hill or mound which is towards the enemy. Hence the *reverse slope* is that away from the enemy.

Ground scouts.—Men employed to ascertain whether the ground in the immediate vicinity is passable and to discover the most favourable route for movement in any direction.

Intercommunication.—The means of transmission of all orders and information by which the close co-operation of all forces in the field is ensured. The means include the

service provided by the Royal Corps of Signals, by regimental signallers and orderlies, by liaison officers and by the army postal service.

Interval, deploying.—The lateral space between units in close column or in column, on the same alignment, the space being equal to the frontage of a unit in line.

Liaison.—Means for ensuring co-operation and keeping touch between units or arms.

Mass.—A battalion with its companies in line of close columns of platoons, with five paces interval between companies.

Oblique fire.—Fire which is directed diagonally, roughly half-way between front and flank.

Observation post.—A post from which a particular area can be kept under observation or from which artillery and machine-gun fire can be controlled and corrected.

Orderly.—A man detailed to carry messages.

Parados.—A bank of earth constructed to give protection against reverse fire and the back blast of high-explosive shells, etc.

Parapet.—Earth, etc., banked up in front of a trench above ground level, to afford protection from frontal fire.

Patrols.—See Chapter IX.

Patrol, standing.—A small party of men under a N.C.O. posted a considerable distance in advance of other troops to watch either the enemy, a route by which he might advance or a locality in which he might attempt to concentrate unseen.

Piquet (tactical).—A self-contained party detached for a definite period from a force for the purpose of carrying out protective duties in the case of warfare against savage or semi-civilized enemies.

Point (with reference to an advanced guard or patrol).—The men moving immediately in advance of a vanguard or patrol.

Position, change of.—A movement by which a body of troops takes up a new alignment.

Reconnaissance.—Examining, exploring and searching the country in order to discover and locate the enemy or to find out the lie of the land.

Reconnoitring detachment.—A party of any size sent out from a force to obtain information.

Rendezvous.—A prearranged place of assembly.

Reverse fire.—Fire directed against the rear of a position.

Revet.—To hold up earth at a steeper slope than its natural slope by artificial means or to strengthen the sides of an excavation by artificial means in order to prevent them falling in.

Sanitation.—The practical application of certain well-established laws with regard to the preservation of health and the prevention of disease.

Scouts.—Men detached to reconnoitre; or individual members of a patrol (*see also Ground scouts*).

Section of a trench.—The sectional view of a trench showing breadth, depth and slope of the sides, etc.

Signal centre.—A prearranged position to which reports intended for a commander are to be sent.

Sump.—A hole dug in the ground to collect surface water with a view to allowing it to soak away.

Traverse.—A buttress of earth provided between two adjacent portions of a fire or communication trench for protection against enfilade or oblique fire and to localize the effect of shell bursts, etc.

INFANTRY TRAINING

1937

PART I—TRAINING

CHAPTER I

WAR ORGANIZATION

1. Principles of organization

1. The characteristics of infantry are described in Field Service Regulations, Vol. II, 1935, Sec. 4, and it is on these characteristics that the war organization is based.

2. The number of men that can be directly controlled in battle by one commander is limited. The basis of infantry organization is accordingly the section, which is the largest group of men that can be controlled personally by its leader throughout the battle. Sections are grouped into platoons, platoons into companies, companies into battalions, and battalions into infantry brigades. The system known as the "chain of command" ensures orderly manœuvre by any number of units in accordance with a single plan, and enables the section commander to assist in giving practical effect to the plans and instructions of the commander-in-chief.

3. Infantry is organized into two echelons, a rifle echelon in which the sections can act as rifle or light machine gun sections, and an echelon of supporting fire. The weapons, whose primary role is the provision of supporting fire, are concentrated in separate machine gun battalions, which will have the task of supporting the rifle battalions, or included in machine gun companies forming part of mixed battalions, which also contain three rifle companies.

4. This manual deals primarily with the handling of the former organization (rifle battalions and machine gun battalions); the principles are, however, generally applicable to both organizations, and, where mixed battalions exist, the detailed changes required are generally self-evident. Where this is not the case, the necessary changes have been described in footnotes.

2. Organization of the infantry battalion

1. *The infantry (rifle) battalion* consists of a battalion headquarters, a headquarter company which contains a signal platoon, a light machine gun platoon for anti-aircraft and ground defence, a mortar platoon and an administrative and transport platoon, and four rifle companies, each of four platoons of three sections.

2. *The infantry (machine gun) battalion* consists of a battalion headquarters, a headquarter company which contains a signal platoon, a light machine gun platoon for anti-aircraft and ground defence and an administrative and transport platoon, three machine gun companies of three platoons each of two sections, each of two guns, and an anti-tank company of four platoons, each of two sections each of two guns.

3. *The infantry (mixed) battalion* consists of a headquarter wing, which contains an anti-tank platoon, a support company, which is composed of three machine gun platoons and a mortar platoon, and three rifle companies, each of four platoons of four sections.

4. In each type of battalion platoons are numbered throughout the battalion, beginning with the headquarter company or wing signal platoon or section.

CHAPTER II

INFANTRY WEAPONS

3. General remarks

1. Some information with regard to infantry weapons is contained in Field Service Regulations, Vol. II, 1935, Appendix II; details with regard to training in the use of these weapons are given in Small Arms Training.

2. The infantry weapons consist of:—

- i. The rifle and bayonet.
- ii. The light machine gun.
- iii. The grenade.
- iv. The pistol.
- v. The machine gun.
- vi. The mortar.
- vii. The anti-tank rifle.
- viii. The anti-tank gun.

3. The characteristics of i to iv are described in Infantry Section Leading, 1934, Chapter III. Each light machine gun is provided with a tripod mounting so that it can be laid on fixed lines; it can then be fired with reasonable accuracy in darkness, fog or smoke, if certain preparations are made in daylight.

4. The method of exercising control of fire is generally the same for all infantry weapons.

The section is the fire unit in both rifle and machine gun companies, except in indirect fire with the machine gun, when the platoon is the fire unit. If, owing to wide extensions, noise, gas or any other reason, control by word of command is no longer possible, then each individual rifleman, light machine gun or machine gun must act independently.

5. In deciding the volume of fire to be used, a sub-unit commander must take into consideration the tactical situation, the target, the range, the state of the ammunition supply and the effect that it is desired to produce. Fire should normally be deliberate (except in the case of machine guns (see Sec. 4, 1, ii)), rapid fire being considered as a reserve of power to be employed only when occasion demands. Even then it must combine accuracy with rapidity and never degenerate into an uncontrolled expenditure of ammunition.

6. Every effort must be made to obtain the correct range to each target. If any doubt exists, it is best to underestimate the range. The accuracy of the range-taking, or judging distance, should be checked by observing the strike of the bullets, where possible, and by comparing the map range. It may sometimes be advisable to direct fire in the first instance on to an area near the target, such as a dusty road or track, where observation is easier.

7. Skilful fire direction and control are, however, of little use unless the men are trained in fire discipline.

Fire discipline entails strict attention to the signals and orders from the commander, correct adjustment of sights, correct recognition, deliberate aim and economy of ammunition. It demands of the men endurance of the enemy's fire even when no reply is possible, and a cool and intelligent use of their weapons when control by the fire unit commander can no longer be exercised.

4. Machine guns

(See *Small Arms Training*)

1. *General*.—The machine gun is the most powerful of all infantry weapons in defence, since it is capable of producing a concentrated volume of accurate and sustained fire beyond the effective reach of rifles and light machine guns, and yet presents only a small target in action. So long, too, as certain preparations have first been carried out in daylight, the accuracy of this fire can be ensured even in darkness, smoke or mist. But at anything beyond close range, the nature of its fire demands accurate range-taking and rigid control to ensure effect, while expenditure in ammunition is liable to be heavy. Machine gun ranges are defined as follows:—

Close : up to 800 yards.

Effective : 800 to 2,000 yards.

Long : 2,000 to 2,800 yards.

The employment of machine guns depends to some extent on the following considerations:—

i. *Long and narrow beaten zone*.—Owing to the great length of the beaten zone in proportion to its width (*e.g.* 300 yards long by 5 yards wide at 1,000 yards range) fire is most effective and has the greatest moral effect when delivered obliquely or in enfilade. The area of ground so swept at close and effective ranges is rendered practically impassable by unarmoured troops.

ii. *Rates of fire*.—Machine guns use three rates of fire—slow, medium and rapid—and if no specific order as to the rate of fire is given, rapid fire is implied. At these rates they expend a belt of 250 rounds in four minutes, two minutes and one minute respectively. During prolonged firing, pauses are necessary to refill the barrel casing with water. Ammunition supply demands careful arrangements.

iii. *Overhead fire*.—Fire over the heads of our infantry can be employed with safety so long as certain precautions are observed. All machine gun commanders, down to section commanders, are provided with a simple instrument for calculating automatically the necessary safety clearance according to the lie of the ground and the range to our own troops and the target. The occasions on which the support of troops in the attack will be possible by overhead fire will generally depend on whether the ground is favourable, and whether time is available for intimate co-operation with the rifle companies. On level ground on account of the low trajectory and the safety limit, the fire must necessarily fall a considerable distance ahead of the advancing troops.

iv. *Indirect fire*.—Though direct fire is the normal and most effective method of engaging a target, machine guns are capable of firing indirectly, *i.e.* when the target is not visible from the gun position. Each section carries the necessary equipment for carrying out such fire. Since no cable is carried, the platoon commander must normally be within voice control of his platoon. The flexibility of fire from indirect positions is limited, since a change of target entails fresh calculations and may entail a change of gun position.

Indirect fire is a suitable method for guns required to fire on one or two targets which can be detailed in advance, when direct fire positions would be unduly exposed; it is particularly suitable for platoons detailed to provide covering fire in the initial stages of an attack. With this method there is less danger of casualties or of guns being pinned to their positions by hostile fire just at the time when they are required to move. For this method of fire certain preliminaries are necessary, but a well-trained platoon should be ready to engage a target as quickly from an indirect as from a direct position.

v. *Concealment*.—The position of a machine gun may be disclosed:—

(a) by the steam, which is liable to be given off after four to six belts of ammunition at "rapid fire" in temperate climates;

(b) by the flash, especially in very dull weather or against a dark background;

- (c) by dust raised by the muzzle blast ;
- (d) by the noise of firing, but detection by this means is difficult, since the crack of the bullet passing through the air tends to drown the actual noise made by the gun firing ;
- (e) by movement round the gun by numbers, and particularly the range-taker, unless particular precautions are taken ;
- (f) by smoke.

2. *Grouping and control.*—The platoon is normally the fire unit for indirect fire. In most other cases the section is the fire unit, with its two guns under voice control. For this reason, and because there is only one range-finder to the section, guns should not normally be employed singly, but on occasions both in attack and defence the independent employment of single guns may be necessary. If platoon control is to be maintained, sections should not be more than about 300 yards apart, as the platoon commander can control them in action only by voice or by orderly ; the sections should not be placed so close together that one shell can put both out of action.

3. *Mobility.*—Machine gun transport may be either armoured carriers, trucks, horsed limbers or pack animals. The speed with which they can be brought into action depends as much on the means of movement of the different commanders and the range-takers as on the method of transport of the guns and essential gun numbers. Machine guns can be man-handled, but the loads are heavy and ammunition supply presents difficulties.

4. *Methods of fire.*—Machine guns cannot be used with full effect unless their fire can be maintained in all conditions. Therefore in defence they should be given first an arc of fire and later fixed lines. In attack the initial targets are the first essential, an arc being allotted later, if circumstances allow.

In both cases every effort should be made to select positions from which the guns can cover as wide an arc as possible, in addition to firing on any definite targets given to them.

In order that fire on fixed lines may be effective, preliminary reconnaissance in daylight is necessary, a view of the target being essential. For this reason the employment of guns brought up into position after dark without previous reconnaissance is limited to firing at close ranges along a clearly defined line such as a road or hedge.

5. *Night firing.*—Before effective fire can be opened after dark or at dawn, certain preparations must be made in day-

light. These require that platoon and section commanders should be allotted their targets and the area for their gun positions, and given a minimum of one hour of daylight on the ground. Once these preparations have been made, the machine guns can be brought into position after dark. This may be of great advantage in effecting surprise.

6. *Maintenance in action.*—Ammunition supply is dealt with in Sec. 47.

Although two men are sufficient to maintain in action a gun once mounted and supplied with ammunition, three men are necessary to carry the gun, tripod, condenser and one belt of ammunition into action even a short distance. The third man is then available to bring up more ammunition. The remaining personnel can come up later. Since movement to and from the gun is liable to disclose its position, adequate ammunition should be placed at the gun at the outset, and thereafter movement near it reduced to a minimum.

7. *Fire effect.*—Observation of the strike of bullets can seldom be guaranteed. Therefore machine gun fire is dependent for fire effect on accurate range-taking and the employment of an adequate number of guns according to the range.

As the range increases, more guns will be required to ensure fire effect, owing to inaccuracies in range-taking and to the decrease in length of the beaten zone.

In deciding on the number of guns required for each task, it may be taken that up to 1,500 yards one section is capable of effectively neutralizing 100 yards of front, or of dealing with a single target, such as a hostile machine gun post. Beyond that range double the number of guns will be required to obtain similar effect.

8. *Selection of positions.*—A clear field of fire, facilities for observation, a covered approach, concealment and cover for the guns and their detachments, and facilities for ammunition supply, are the requirements of a good fire position. Except in the attack and in rear guard actions, positions in low ground and at close range should be occupied wherever possible, to make use of grazing fire. In arranging for the concealment of the guns, it is important to consider the background. The neighbourhood of landmarks and the tops of prominent features should be avoided.

5. Mortars

1. *General.*—The mortar is a weapon with a high angle of fire discharging a 10-lb. bomb which may be either H.E. or smoke. The explosive charge or smoke producing content

is very high in proportion to the weight of the bomb. The maximum range is 1,500 yards.

The employment of the mortar for the production of smoke will be governed by the general considerations in Field Service Regulations, Vol. II, 1935, Sec. 9.

2. *Accuracy and rate of fire.*—Compared with its range the mortar has a comparatively large 100 per cent. zone (e.g. 100 yards long by 72 yards wide at 1,000 yards, the 50 per cent. zone being one quarter that of the 100 per cent. zone). It cannot therefore be expected to obtain a direct hit on a small target, such as a dug in machine gun post, without a considerable expenditure of ammunition.

Two rates of fire are used :—

Rapid	..	..	..	20 rounds a minute.
Slow	..	..	..	8 rounds a minute.

Subject to ammunition supply, a large volume of fire can therefore be produced for a limited period, during which the target will be neutralized if not destroyed. Immediate use must be made by rifle companies of this fleeting opportunity of regaining their power of movement. It should be borne in mind that owing to the slow flight of its bombs the mortar is not of great use against a moving target.

3. *Mobility.*—The mortar may be divided into three loads and carried for short distances from its vehicle by members of the detachment. Their movement will, however, be slow and the provision of ammunition will be difficult. In principle, therefore, the position should be selected so that the "carry" is limited to 200 yards. As the vehicle is conspicuous, it should move rapidly from place to place, and before a move forward the route should if possible be reconnoitred to prevent delays, full use being made of available cover.

Once the mortar is in action, it can fire for effect within three or four minutes of the target being indicated.

4. *Night firing.*—Mortars can be laid on fixed lines for firing at night. In the same way as machine guns, they can be brought into action after dark, provided that arrangements have been made in daylight and the ranges have been ascertained. In such cases, however, the fire will lose in accuracy.

5. *Positions.*—Mortar positions may be direct or indirect. The former can be occupied more rapidly but are dependent on suitable cover.

In the case of indirect positions it is essential that the fire controller should be near enough to the position to control the fire, if possible, by voice, and, failing that, by visual signal. Owing to its high angle of fire the mortar can come

into action almost anywhere provided there is no overhead obstruction.

In the attack, the action of the mortar can be of such short duration that, if its position is disclosed by its fire, there will seldom be time for the enemy to concentrate on it before it has moved. It may therefore be handled boldly.

When the position is to be occupied for any length of time, an alternative position should be selected, in case the first position is rendered untenable or blinded by the enemy.

6. Anti-tank weapons

1. Infantry anti-tank weapons consist of :—

- i. the .55-inch anti-tank rifle and
- ii. the anti-tank gun.

2. *The .55-inch anti-tank rifle.*—Anti-tank rifles are carried in unit transport ready for issue when required. They are not specialist weapons and all ranks will be taught to fire them. Men should be trained to aim at the places in tanks and armoured cars where the driver and gunner will be, rather than at the vital parts of the machine. (See Small Arms Training, Vol. I (1937), Pamphlet No. 5.)

3. *The anti-tank gun.*—The anti-tank gun is a 2-pr. gun on a pneumatic tyred travelling carriage which is towed behind the truck which carries the team. Normally the gun is fired from the ground on a central pedestal mounting which gives an all round traverse. It can be fired from its wheels in an emergency.

CHAPTER III

PRINCIPLES AND SYSTEM OF TRAINING

7. General instructions

The principles and system of training of the Army are laid down in Training Regulations. This chapter, which should be studied in conjunction with Training Regulations, applies these instructions particularly to the training of infantry.

8. The object of training

The characteristics of infantry are described in Field Service Regulations, Vol. II, 1935, Sec. 4, and the training should be such that these characteristics can be exploited in war to the fullest extent. The object must therefore be to produce the following :—

i. *As an individual.*—A formidable fighting man like an expert hunter—always alert and seeking an opportunity of striking at his quarry or watching his movements with a view to future opportunities, confident and expert in the use of his weapons, skilled in the use of ground and able to stand fatigue without undue loss of efficiency. He must be determined, inquisitive and self-dependent, but must always remember that he is acting as one of a team. He must be highly proficient with the pick and shovel and able to erect wire obstacles and protect himself against gas.

Above all, he must be highly disciplined, for by discipline alone can morale be maintained; it is the bedrock of all training. It is the ingrained habit of cheerful and unhesitating obedience that controls and directs the fighting spirit, and is the backbone of a unit in a moment of crisis.

ii. *As units.*—Controlled and flexible units, in which, like good machines, each part must work smoothly and in harmony with the remainder to achieve the object of their commander. Rapid deployment and the execution of a plan should be possible without fuss or loss of control; the organization of command should be such that information and orders are communicated quickly and accurately; units and sub-units must be so administered that they take the field as fit as possible for battle in all respects.

9. Recruit training

(See also *Training Regulations*, 1934, Sec. 4, 10)

1. This section deals with the training of regular recruits. As far as the difference in their conditions of service admits, training of recruits for infantry of the Reserves, and Territorial Army, etc., will be carried out on similar lines. (See also Sec. 18.)

DEPOT ORGANIZATION

2. For the training of regular recruits, the regimental depot is organized as follows :—

- i. A depot headquarters.
- ii. An administrative company.
- iii. A recruit training company.
- iv. A training cadre.

The administrative company contains certain specialist instructors and all personnel not immediately connected with the training of recruits.

The recruit training company will carry out the individual training of recruits.

The training cadre has three duties :—

- (a) To teach recruits section and platoon organization, platoon drill and battle formations.
- (b) To train N.C.Os. in the instruction of recruits, and to ensure that these instructors are kept up to date in the latest and most efficient methods of training.
- (c) To illustrate simple tactical exercises to N.C.Os. under training, and to Territorial Army and Officers Training Corps units.

3. Squad instructors will be carefully selected. They must be intelligent, energetic, smart in their bearing and thoroughly well trained in the art of instruction. It is important that they should be both patient and sympathetic as well as strict disciplinarians. Whenever possible, N.C.Os. selected for the training staff at a depot should have previously qualified at the Small Arms School, Hythe Wing.

SYSTEM OF TRAINING

4. Recruits will be formed into squads for instructional purposes.

The normal number of recruits in a squad will be 30, and training will begin on the first Monday after the squad is complete.

Each squad should be given a distinctive name and occupy, where possible, a separate barrack room so long as this does not

lead to overcrowding; the "squad" spirit will thus be encouraged both in training and recreation.

5. The same squad staff should normally remain with the squad throughout the period of training and carry out the whole of the instruction, except elementary collective training, which generally will be carried out by the training cadre, and physical and educational training, which will be taught only by fully qualified instructors.

6. The daily work should be arranged with as much variety as possible. Every endeavour must be made to avoid monotony, with its consequent loss of interest.

7. The normal course of recruit training will be 18 weeks, at the end of which period the recruit will be posted to a battalion.

8. The principle that a squad should reach the required standard at the depot after a full 18 weeks' training will not be departed from, but recruits who have not attained the required physical standard may be retained for a short additional period; also, when a squad has experienced an exceptional amount of inclement weather or sickness, permission may be given by higher authority for it to be allotted the necessary extra time at the depot.

9. Before a squad is posted to the battalion, the depot commander will determine whether the individuals in it have attained the necessary standard of efficiency. A medical officer will also examine the squad as to the physical fitness of its members.

10. If, owing to insufficient accommodation at the depot, recruits have to be sent to the battalions before completing the course of training, a detailed statement on A.F. B 2091, showing where they have arrived in the syllabus, should be included with their documents, and their instruction should be carried on from that point when they join their battalion. On joining their battalion, such recruits will, for the purposes of administration, be posted to companies as supernumerary to the establishment of platoons, but will not be taken for drill, training or manœuvres with their companies until dismissed recruit training.

11. With the exception of waistbelt, braces and cartridge carriers, which will be used for all weapon training parades, full equipment will not be worn on parade during the early part of the training. Instructors will wear waistbelts on all parades, with braces and cartridge carriers on weapon training parades.

Dummy cartridges will always be used by both instructors and recruits on all weapon training parades. These dummy cartridges will be inspected before every parade to ensure that no ball ammunition is present.

STANDARD OF EFFICIENCY AND SYLLABUS

12. A detailed syllabus of training to be carried out at the depot of a rifle or mixed battalion is given in Appendix I. The following is the standard of efficiency to be attained before a regular recruit joins his battalion. He should:—

- i. Be able to turn out correctly in every "order of dress" and be fit to take his place in the ranks of the platoon, in close order drill.
- ii. Have a thorough knowledge of barrack room duties and interior economy generally.
- iii. Be capable of performing the duties of a sentry on guard.
- iv. Be able to carry out a short route march in marching order.
- v. Have completed 95 recruit physical training attendances.
- vi. Have fired the prescribed weapon training course and have received instruction in visual training.
- vii. Have received instruction in the individual use of ground, night work and how to work as a scout.
- viii. Have had his respirator fitted, have been instructed in its adjustment, wearing and maintenance, and have some knowledge of war gases.
- ix. Be well grounded in bayonet training.
- x. Understand section and platoon organization, the movements of platoon drill and battle formations.

13. The syllabus for a recruit of a machine gun battalion and the standard of efficiency to be reached will be similar to that of a recruit of a rifle battalion, with the necessary modifications in tactical and weapon training.

TRAINING AFTER JOINING BATTALION

14. On joining his unit, the recruit of a rifle or mixed battalion will be given the additional instruction in the light machine gun necessary for passing all the tests of elementary training. He will also be given further instruction with the rifle. As soon as possible after this has been done he will complete his weapon training course.

The course of anti-gas training will be completed and anti-aircraft training will be given both with the rifle and light machine gun.

15. Although the aim of recruit training is to enable the recruit to take his place in a platoon of a battalion serving at home, it is not possible at a depot to teach him more than the elements of his role in the field. It is important, therefore, that, in addition to the completion of his weapon training, the instruction of the recruit should continue progressively after he has joined his unit, and that he should not, when it can be avoided, take his place in a platoon without further special instruction.

16. When conditions permit, it is advisable for squads of recruits, on joining from the depot, to be posted to a company as a complete platoon, the platoon and section commanders of which have been selected beforehand and have prepared a programme of training designed to train the platoon to take its place in the company in the field. The period of this training must depend on circumstances, but it is important that the platoon while training should be struck off all duties and placed entirely at the disposal of its commander. This system has the further advantage that the spirit of the depot squad is continued after the recruits join their unit.

10. Individual training

(See also *Training Regulations, 1934, Chapters I and II*)

GENERAL REMARKS

1. The individual training season is the period of the year in which the foundations of the efficiency of the unit are laid.

The training may be divided into two categories:—

- i. The training of the man.
- ii. The training of the leader.

2. In all wars soldiers have been required who are disciplined, physically fit and skilled with their weapons. In modern war, with its more powerful weapons and greater decentralization, the responsibility of the individual has been increased and he therefore requires a far higher degree of individual initiative than was formerly necessary.

Commanders must do all that they can to encourage initiative and individuality, remembering always that these must be disciplined.

3. The opportunities afforded by the carrying out of the various employments about barracks should be made use of to train troops in individuality, foresight and proper organization, in order to produce the best output with the minimum of labour.

4. The training of men considered to be potential N.C.Os. will receive particular attention.

ORGANIZATION OF TRAINING

5. At the beginning of the training year, the battalion commander will prepare a programme to cover the whole individual training period, to enable company commanders to arrange their own detailed programme of instruction. In preparing this programme, he will have to consider such matters as courses of instruction, availability of instructors, leave, drafting, garrison and regimental duties and battalion cadre courses, with a view to ensuring that the personnel of companies struck off for training are available, and that their instruction is sufficient.

The individual training period can be sub-divided generally into four phases:—preparation, furlough, company individual training and the annual weapon training course.

6. *The period of preparation*, at the beginning of the year, is complicated for the organized training of individuals, in a unit at home, by draft finding requirements. Specialists should at once be brought up to establishment and their training begun; in a mixed battalion the annual turnover of machine gunners and range-takers should take place and their training started, so that they will be available for duties when company individual training begins. Classes should also be held for the training of company instructors, who will be required later. The training of individual soldiers during this period should be designed to economize time for training during the later phases; as many men as possible should complete their educational training and their tests of physical efficiency, while map reading classes and digging exercises may also be held. Special classes should be held for men recommended for promotion.

COMPANY INDIVIDUAL TRAINING

7. From the commanding officer's programme company commanders will know the periods which they have available for individual training. They will, with their platoon commanders, draw up a programme in outline for the whole period some weeks beforehand, to allow their subordinates to look ahead and to prepare themselves as instructors.

8. The company commander will, as a rule, have two types of period to contend with, one when his company is "struck off" all duties, and another when only a proportion of his men will be available. The latter type of period can easily be wasted, and its value will depend on the organizing ability of the company commander.

9. Foresight must be exercised to ensure that the maximum number of men is available. The men will be squadded for instruction in accordance with their ability, knowledge and service. This will generally render it impossible for men to be squadded by sections, or even by platoons. It is obviously waste of time to give skilled marksmen elementary instruction in the rifle. Intelligent men should be pushed rapidly through the elementary work and given more advanced instruction, it being remembered that a thoroughly efficient private should be capable of leading a section.

10. To ensure continuity of instruction, a record of attendances should be kept, showing the lessons given to each individual and the state of efficiency achieved. The company commander should have in his office tables showing the number of lessons (with reference to manuals) that experience shows to be necessary in each subject.

Each man, at the conclusion of individual training, will be marked by his company commander as "good," "efficient," or "backward," some such system being essential to judge whether a man is qualified for the grant of military proficiency pay.

THE TRAINING OF INSTRUCTORS

11. All officers and N.C.Os. must be capable of training their men in their everyday duties. Over-centralization of training in such things as drill, physical training (trained soldiers) and weapon and anti-gas training, which are the duties of every officer and N.C.O., should not be permitted.

12. A forecast should be prepared as far as possible for the attendance of officers and N.C.Os. at the various army schools of instruction, and arrangements made for the candidates selected to receive adequate preparation.

TRAINING CADRE

13. A simple and efficient method of ensuring that the knowledge gained at the various wings of the Small Arms School is handed on in a unit is the institution of a battalion cadre during the individual training season. The object of the cadre should be to train junior officers and N.C.Os. as instructors. It may be dispensed with in cases where the instruction can be given adequately in companies. Tactical training of junior N.C.Os. may also be taught on similar lines, where it cannot be organized suitably under company arrangements. It must be understood, however, that this is done to assist the company commander, who must remain ultimately responsible for their tactical efficiency.

14. It must be remembered that on mobilization a large number of officers and N.C.Os. will be required from battalions for duties in connection with the training of recruits, and for other purposes. These instructors must be trained in peace time.

15. To act as an instructor is one of the best means of becoming a master of a subject and fixing it in the mind.

SYLLABUS OF TRAINING

16. A syllabus of training for each category in the battalion is given in the succeeding sections.

11. Individual training of the soldier

The aim of the individual training of the soldier is described in Sec. 8.

This training will consist of:—

i. The training of soldiers in their individual duties in the section in war, including close order drill, fire discipline and the use of ground.

ii. The training of soldiers in the use of their weapons. Every man should undergo the tests of elementary training as laid down in Small Arms Training, and a record should be kept of the results. The training of indifferent shots will receive particular attention.

iii. Practice for all ranks in visual training, including judging distance and the indication and recognition of targets.

iv. Training in anti-gas measures. The aim of training in the use of the respirator will be to ensure that all ranks are able to use their weapons and instruments and to perform their duties, including marching, without loss of efficiency.

v. Instruction in the handling of picks and shovels and their use; the method of filing on to, and the marking of, tasks; also the construction of wire obstacles. This instruction should be carried out both by day and by night.

vi. Assault bridging and the use of folding boat equipment.

vii. Physical training (trained soldiers). Every man should be exercised as laid down in Physical Training.

viii. Training as scouts (*see* Infantry Section Leading). All soldiers should be prepared to act as scouts.

ix. Map reading.

x. Training in packing and loading of the vehicles in use with the battalion.

xi. Training of specialists, including intelligence section personnel, signallers, range-takers, orderlies, stretcher bearers, transport drivers, farriers.

xii. Training at night, to accustom the soldier to moving and working in the dark. (See Sec. 36.)

xiii. The use of the field dressing and elementary military hygiene (see Army Manual of Hygiene and Sanitation).

xiv. Lectures with the object of developing a sense of personal honour, duty, patriotism and *esprit de corps*.

xv. Should facilities exist and time permit, the following training should be carried out :—

- (a) Knotting and lashing, and use of spars.
- (b) Revetment and drainage of trenches.
- (c) Construction of shelters.
- (d) Embarkation, disembarkation, entraining and detraining of animals and vehicles.
- (e) Semaphore signalling.

12. Training of orderlies

Orderlies are essential for intercommunication in battle and must be specially trained to :—

- i. use covered lines of approach ;
- ii. read a map ;
- iii. deliver verbal messages.

Accuracy in the transmission of verbal messages cannot be obtained without constant practice. The orderly must always be made to repeat a message before he is despatched. On arrival, he must call out loudly the designation of the person to whom the message is directed. The message must be delivered in a clear steady voice.

13. Individual training of leaders

(See also Training Regulations, 1934, Chapter II)

OBJECT

1. The individual training of officers and N.C.Os. should aim at giving them the ability and knowledge :—

- i. to command and lead men in war ;
- ii. to be trainers of men in peace ;
- iii. to fit themselves to command a unit higher than that which they command in peace.

SYLLABUS FOR JUNIOR N.C.Os.

2. In addition to the training outlined in Sec. 11, junior N.C.Os. and selected privates will be instructed and exercised in :—

- i. Formations with reference to ground and fire.
- ii. Fire orders and control and the theory of small arms fire.

iii. The action of the section in attack, defence and protection by day and night. This will include the principle of combining fire with manœuvre, the use of cover and smoke, the siting of trenches and obstacles and protection against aircraft and gas.

iv. The making of quick decisions based on practical situations which require the common sense application of principles, and giving verbal orders.

v. The conduct of patrols, by day and night.

vi. Noting the essential points in orders received.

vii. Map reading and the use of the compass.

viii. Writing reports and messages.

ix. The application of the above in the training of their section.

SYLLABUS FOR OFFICERS AND SENIOR N.C.Os.

3. The training of officers and senior N.C.Os. will include in addition :—

- i. The study of ground.
- ii. Reconnaissance.
- iii. The issue of orders and messages, both verbal and written.
- iv. Dispositions for attack, defence and protection.
- v. The application of fire with special reference to fire direction.
- vi. Wood and village fighting.
- vii. Co-operation with other arms.
- viii. The setting and supervision of exercises.
- ix. Fitting and detection of defects in respirators and anti-gas equipment.
- x. The management and tactical handling of mechanical transport.

TACTICAL TRAINING

4. Instructions for the individual training of officers and senior N.C.Os. are contained in Training Regulations, 1934, Chapter II. Though this training will be carried out to a certain extent by company commanders with their junior N.C.Os. the greater part must be organized under battalion arrangements.

Exercises without troops (see Training Regulations, 1934, Sec. 27) should be held at intervals throughout the individual training season, to ensure that all officers and N.C.Os. receive instruction and that a common doctrine is spread throughout the battalion. This training should not be confined to a short concentrated period, although such periods ("officers and N.C.Os. weeks") may be advisable in addition shortly before the collective training season.

Exercises which are designed primarily for the instruction of company commanders and more senior officers may not always be suitable for more junior officers and senior N.C.Os. If necessary, therefore, different exercises should be designed for these two categories, but one exercise can generally with advantage be based on the other. The training value of setting schemes should not be overlooked.

5. Junior N.C.Os. will be trained on the lines laid down in paragraph 4 above, but normally under their own company commanders. In certain circumstances, however, at home stations, it may be desirable to organize this training in the battalion training cadre. (See Sec. 10, 13.)

Full use should be made of demonstrations (see Training Regulations, 1934, Sec. 30), and care should be taken that too much time is not devoted to theoretical instruction at the expense of practical work on the ground.

The company commander will devote special attention to the training of section commanders in grasping situations rapidly, in issuing orders clearly and quickly to their men and in adopting suitable dispositions for the task in hand. The successful handling of the platoon in war will depend largely on the initiative and powers of leadership displayed by section commanders. The intelligent application of tactical principles must therefore be so engrained and developed that, once the role of their sections has been explained to them, they can carry it out without further orders from the platoon commander.

6. In all stages of training advantage must be taken of local conditions to teach those lessons for which the ground available is best used.

Sand models should be used for indoor instruction (see Training Regulations, 1934, Sec. 27, 15).

ADMINISTRATIVE TRAINING

7. Administrative training will be carried out in accordance with Training Regulations, 1934, Sec. 8.

14. Collective training

(To be read in conjunction with Training Regulations, 1934, Chapter IV)

GENERAL REMARKS

1. On the completion of individual training, companies will be struck off duties for one or more periods of collective training; this will be followed in succession by battalion, brigade and higher training. (See Training Regulations, 1934, Sec. 4, 13). As in the case of individual training (see Sec. 10, 5),

the battalion commander will prepare his programme for the whole collective training period, to enable company commanders to arrange their own detailed programmes. In doing so they will divide the time available between section, platoon and company training, the time devoted to each subject depending on various factors, such as the previous experience of his men; a uniform programme cannot therefore be laid down, but the principle that the training is progressive (see Training Regulations, 1934, Sec. 31, 2) must be followed.

PREPARATION OF EXERCISES

2. The success of any phase of training will depend primarily on the foresight which has been shown in the preparation of exercises. The schemes and arrangements for these exercises should have been completed before a company or battalion is struck off for its period of training. This preparation is discussed in Training Regulations, 1934, Chapters III and V.

RIFLE SECTION TRAINING

3. The object of section training is to practise each section in carrying out the duties of a section described in Infantry Section Leading. The section is the fire unit of the infantry and is the largest formed body that can be personally controlled by its leader throughout the battle. The section commander should therefore be given every opportunity of commanding and training his section, but the training must be carried out under the general supervision of company and platoon commanders. The extent to which section commanders will be able to train their sections will depend on the adequacy of their individual training and the previous preparation of the lessons.

4. The syllabus of the section training may include the following:—

i. *Section formations for movement.*—This may be carried out first as a drill and then applied to the ground, and later to considerations of security from the enemy's fire and to fire production (see Sec. 27). Under this heading may be included formations for street fighting and for movement through woods, bush, etc. (Infantry Section Leading, 1934, Chapter X.)

ii. *The section as a fire unit.*—All sections will be trained to act as rifle and/or light machine gun sections. The use of the grenade will also be taught. Fire discipline training (see Small Arms Training) should be included.

iii. *The section as a patrol.*—The section should be practised in the various types of patrol, both by day and night. Exer-

cises might deal with reconnoitring and standing patrols, and the withdrawal of a patrol under pressure. (See Chapter IX.)

iv. *The section in the attack.*—(See Infantry Section Leading, 1934, Chapter IX.) Sections should be practised in the attack under varying conditions.

v. *The section in the defence.*—(See Infantry Section Leading, 1934, Chapter VIII.) This will include the selection and occupation of section posts, the digging of weapon pits and the organization of the post.

vi. *Anti-gas.*—Anti-gas reconnaissance, and the action to be taken on encountering a blister gas obstacle.

vii. Section duties at a road block.

During section training demonstrations might include a section fully equipped (as a rifle or light machine gun section, and/or grenades), and a range demonstration of the fire power of each type of section.

Field firing will also be included, whenever possible, in the section or platoon training periods.

RIFLE PLATOON TRAINING

5. The platoon is the basic unit of infantry tactics, and it is on platoon training that the efficiency of the unit will largely depend. Platoon training will begin as soon as sections have been trained.

6. The syllabus of platoon training may include the following:—

i. *Demonstrations* of a fully equipped platoon, and of the fire power of a platoon. This should impress on the platoon its fighting value on the battlefield.

ii. *The platoon as a patrol.*—Training should concentrate on patrolling both by day and by night (Secs. 51 and 52). A platoon which is really efficient at patrolling, particularly at night, will find little difficulty in carrying out other operations. Patrol schemes may include the platoon acting as point, as a covering party in defence, as a fighting patrol, as a standing patrol or to delay the enemy in a withdrawal.

iii. *The platoon in the attack.*—The platoon should be practised in attack when fighting its own way forward or when supported by other arms. The principles of the combination of fire, ground and movement and the importance of control should be stressed. The comparative value of different formations should be understood. Some schemes should include reorganization and consolidation. The attack should be carried out in all types of country, attention being paid to the theory of co-operation with tanks (which may be represented by

flags, etc.) and to fighting in woods and other forms of enclosed country.

iv. *The platoon in the defence.*—Exercises should include the various stages from the hastily occupied position (as in outposts) to the highly organized position.

v. *Fire direction.*—Platoon commanders will be trained in their duties as regards fire direction. (See Small Arms Training.)

vi. *Field firing* should take place, if possible, during platoon training.

vii. *Night work*, in addition to patrolling, should include a night compass march, a night attack, forming up on a starting line at night, consolidation by night and withdrawal.

viii. *Assault bridging.*—Each platoon should carry out bridge building, launching and maintenance, and be trained in forming a close bridge head.

ix. *Marching.*—Marching and march discipline (see Field Service Regulations, Vol. II, 1935, Sec. 22) should be practised with a view to a platoon being able to fight, if necessary, at the end of a day's march. At the same time anti-aircraft defence and the adoption of open formation should be practised.

x. *Anti-gas.*—Some of the above exercises will be carried out in respirators, and platoons will be exercised in the action to be taken on encountering an area contaminated with blister gas.

xi. *Platoon headquarters.*—Attention will be given to the training of platoon headquarters, the work of orderlies and the rapid transmission of messages. Senior N.C.Os. will be given an opportunity of commanding platoons.

xii. *Drill.*—Short periods of steady drill may be included in the programme.

xiii. *Transport.*—Tactical handling of platoon transport.

RIFLE COMPANY TRAINING

7. When the company commander considers his platoons are fit to take their places in the company, the latter will be exercised as a whole. Exercises, which must be progressive (see Training Regulations, 1934, Sec. 39, 2), will be framed to deal with the various types of operations in which the company may be involved, such as: defence, where the rapid organization of the defence is of importance; outposts and protection on the move; withdrawal by day and by night; attacks, by manoeuvre, and by infiltration, and co-ordinated attacks, both with and without the co-operation of tanks; attacks in woods and by night; consolidation; reorganization; marches followed by outpost duties, exploitation or some other

tactical action; the passage of obstacles, etc. They should also be taught to deploy rapidly and to move in open formation. Attention should be devoted to the work of company headquarters, the training of orderlies and the handling of company transport.

8. Co-operation between rifle companies and machine gun and mortar platoons must be constantly studied. In tactical exercises a proportion of machine guns and mortars should, whenever possible, be allotted to work with rifle companies.

9. In the early stages of tactical training, schemes should be carried out by phases, each phase being repeated and practised until the lesson has been fully understood and mistakes rectified; in the later stages of company training it is important that situations should be worked out to their logical conclusion, and that troops should be practised in delivering and receiving an assault (including counter-attacks), in methods of consolidation, in the pursuit, in assuming the offensive from the defensive and in withdrawals; also in keeping direction and the orderly continuance of operations after units have become mixed and commanders incapacitated. During this period a company should occasionally be made up to war strength in order to practise commanders in handling their units under active service conditions. At the end of the course the company should, where local conditions admit, carry out a company march consisting of continuous training of about three days' duration, for which a special scheme should be prepared.

10. Instruction will also be given in such field engineering as might be required to be undertaken by infantry in war. Officers and N.C.Os. should be instructed and practised in the organization of work, including timely preparation and efficient distribution of men, tools and materials on the work. (See Appendix IV and Manual of Field Engineering, Vol. I (All Arms), and the Field Service Pocket Book.)

The soldier should have learned during the period of individual training how to use the various tools, and the elementary principles of field fortification. During his training in field operations he should be taught to apply his knowledge to various tactical situations, *e.g.* attack, consolidation, defence, protection, etc.

15. Training of the headquarter company

1. *General.*—The training of the headquarter company will be carried out as follows:—

i. All groups will be exercised in the annual course of weapon training, as laid down in Small Arms Training.

ii. Signallers will be trained in accordance with the instructions contained in Signal Training (all arms).

iii. All N.C.Os. and men of the headquarter company will be trained in the particular duties which they will perform in war. This will, in some cases, entail certain personnel carrying out training in these duties with companies.

iv. In addition, those personnel not exempted, as shown below, will be attached to sections and platoons of companies for collective training. All officers, N.C.Os. and men will be attached to other companies and undergo collective training, except signallers, the intelligence section, full bandsmen, drummers or buglers, transport men and those exempted from the annual course of weapon training.

2. *Training of the battalion intelligence section.*—The employment of the intelligence section is described in Sec. 45.

Men must be carefully selected for training. They must be intelligent, and should possess eyesight and physique above the average. Those who have a natural sense of direction, and are self-reliant and resourceful, will make the most apt pupils.

The training will include:—

- i. Observation both with and without glasses, and by listening.
- ii. Use of ground to screen movement and the memorizing of ground.
- iii. Map reading, including the use of the prismatic compass, and how to find direction by the sun and stars.
- iv. Judging distance.
- v. Writing reports and messages and the production of simple sketches.
- vi. Organization of their own and other arms.
- vii. Recognition of aircraft.
- viii. Anti-gas intelligence work.
- ix. Use of air photographs.
- x. Concealment. Use of light and shade.
- xi. Night work.
- xii. Quick decisions.
- xiii. Means of signalling.
- xiv. Method of dealing with prisoners or captured documents.

Intelligence personnel must be acquainted with the system of intercommunication for reporting items of intelligence.

The N.C.O. of the battalion intelligence section will, in addition, be specially trained in verifying reports, selecting posts and taking the section officer's place when the latter leaves his headquarters.

The officer in charge of the battalion intelligence section will be trained to carry out the duties laid down in Sec. 45.

3. *Training of battalion headquarters.*—During the company training period battalion headquarters and signallers will be practised in their duties in the field by means of tactical exercises without troops and signal exercises with skeleton formations.

The headquarter companies of battalions should be organized on a war basis during battalion and higher training, and men in the headquarter company should be employed on the duties which they will perform in war.

16. Battalion training

(See *Training Regulations*, 1934, Sec. 33)

1. On the completion of company training, the battalion will be struck off all duties for battalion training. The objects of this training are to enable the commander to co-ordinate and direct the action of component parts of the battalion, to exercise the machinery of command, to give the senior officers of the battalion opportunities for more extensive command and to practise the sub-units in mutual co-operation.

2. There should be a proportion of both two-sided and one-sided exercises (see *Training Regulations*, 1934, Sec. 31, 8). During the former, one part of the battalion may fight the remainder under the direction of the commanding officer, thus giving two other regimental officers practice in command. During one-sided exercises the battalion will work as a whole, companies acting in co-operation; to give the commanding officer an opportunity of commanding his battalion, a proportion of these exercises should be set and directed by another officer.

17. Training of machine gunners *

INDIVIDUAL TRAINING

1. While the syllabus described above is applicable generally to the training of machine gunners, certain points will require special consideration. The details and sequence of technical machine gun training are contained in *Small Arms Training*.

2. Officers and senior N.C.Os. must receive a thorough training in all subjects laid down in *Small Arms Training*, and in the *Handbook of the .303-inch Vickers Machine Gun*. Officers and N.C.Os. will attend a course at the Machine Gun Wing of the *Small Arms School* at the first opportunity

* See Preface.

after being thoroughly trained in all subjects included in the training of the first year machine gunner.

3. At the beginning of the individual training period the machine gun company commander must expect to find the personnel of his company in various stages of training. He should therefore be prepared to deal with several categories, *i.e.* :—

- i. First year officers and men.
- ii. Second year men, range-takers, scouts and transport personnel.
- iii. First year officers, junior N.C.Os. and selected privates for training in leadership and fire control.
- iv. Trained officers and N.C.Os.

The training of these categories must be organized in accordance with the number of instructors available.

4. The training of transport personnel in tactical driving must receive consideration.

5. Tactical exercises without troops for officers and N.C.Os. will be carried out. These exercises should involve reconnaissance, the rapid appreciation of a situation, the issue of tactical and fire direction orders and the preparation of reports and sketches, as well as considered problems of ammunition supply. Exercises should also bring out technical machine gun methods.

The actual presence of machine guns on such schemes may be of value to test the feasibility of the orders given and the time actually required to carry them out.

All machine gunners must have a good knowledge of rifle company tactics, and officers and N.C.Os. should be attached to rifle companies for their tactical exercises without troops.

6. The weapon training of the machine gunner will be carried out as laid down in *Small Arms Training*. All machine gun personnel will be trained in the use of the pistol, the number actually firing the course being laid down in *Small Arms Training*.

7. By the end of the individual training period the following stages should have been completed :—

- i. The training of the personnel of platoon and section headquarters in the various duties.
- ii. The instruction of the men in each subsection in their duties.
- iii. The instruction of leaders to control fire and of their subsections to reorganize and engage targets as well as to maintain their guns in action.
- iv. The instruction outlined in Sec. 11.

8. The platoon will not be considered fit to begin collective training until it has reached the above standard and individuals have completed Part II of the annual machine gun course.

The battalion commander will carry out an inspection at this stage.

COLLECTIVE TRAINING

9. The collective training of machine gunners is described in Small Arms Training. It consists of four stages, as follows :—

- i. Section training.
- ii. Platoon training.
- iii. Parts III and IV of the annual machine gun course.
- iv. Company training, including Part V of the annual machine gun course. All ranks will be present during this training.

PROGRAMMES OF TRAINING

10. The company commander must decide the time to be allotted to the various stages referred to above. He will supervise the training of platoons in field operations and ensure that each sub-unit is fit to proceed to the next higher stage of training. The following will be taken as a guide in the preparation of programmes.

11. *General* :—

- i. All exercises should include both technical and tactical lessons.
- ii. Normally the tactical lesson to be taught will be made known to all ranks before the exercise begins.
- iii. The technical lessons will be brought out by instructional criticism during and after the exercise.

12. *Section training* will include the following tactical lessons :—

- i. The action of a section carrying out the various tasks in attack and defence, which are described in Infantry Section Leading. Sections and subsections should be practised in operating independently.
- ii. The action of a section with a rear guard.
- iii. The occupation of section positions by night.

13. *Platoon training*.—The tactical lessons for a platoon will be similar to those detailed in paragraph 12, above, but the exercises will also be framed to bring out the handling of the platoon as a whole, and will include the occupation of fire positions.

The difficulties of ammunition supply in the field make it important that practice should be carried out with the full complement of transport. Attention should be paid to tactical driving.

14. *Parts III and IV, annual machine gun course*.—(See Small Arms Training.) These will be fired on a battle practice range. The objects of the practices are :—

- i. To instruct all ranks in the principles of machine gun fire and the application of machine gun tactics in the field.
- ii. To accustom commanders to make rapid appreciations and quick decisions, and to issue such orders as will ensure their intelligent and rapid execution.

The exercises should deal with problems which are likely to confront a junior commander in war. They will normally be drawn up by company commanders, under the supervision of the battalion commander, who should be present and should act as director.

15. *Company training*.—This will consist of schemes designed to exercise the company as a whole. Schemes may be carried out under company, battalion or brigade arrangements and will include Part V, annual machine gun course. Arrangements should be made for a proportion of this training to be carried out in co-operation with rifle companies.

16. *Higher training*.—During higher training exercises will be arranged in co-operation with rifle battalions. (In the case of mixed battalions, this training will be automatic during battalion training.) Problems will be designed to bring out the duties of the machine gun battalion headquarters (or of the brigade machine gun officer in the case of mixed battalions). The object of this training will be to exercise the machine gunners in co-operation with rifle units and other arms. To achieve this, schemes should include :—

- i. The allotment and interchange of roles, and the distribution of fire in accordance with the fire plan and the progress of the fight.
- ii. Intercommunication and the supply of ammunition.

18. Training of the Territorial Army

GENERAL INSTRUCTIONS

1. The training of the Territorial Army is dealt with in Training Regulations, 1934, Sec. 4, 15, *et seq.* It is not possible for the infantry of Territorial Army units, in the limited time for training at their disposal, to carry out the whole course of

training laid down for the Regular Army; the general principles are, however, the same.

2. As the amount of time available for training in peace is limited, it is essential that the standard of elementary training should be satisfactory, before more advanced work is attempted.

3. It is of particular importance that sufficient leaders and instructors should be produced to train the large influx of recruits on mobilization.

4. The necessity for producing units with a well-drilled soldierlike appearance to foster the traditions of the Territorial Army cannot be over-emphasized.

5. *Organization of the training year.*—In view of the varying conditions under which training must be carried out in different units, no fixed rules for training can be laid down. The following sequence is, however, suggested for a training year beginning in the autumn :—

i. *First period.*—The individual training of officers and instructors.

ii. *Second period.*—The individual training of junior leaders, recruits, trained soldiers and specialists, to include the annual range course and, if possible, section and elementary platoon training.

iii. *Third period.*—Annual Camp (*see* Training Regulations, 1934, Sec. 4, 23). The proficiency gained in platoon and company training will be the measure of the higher training that may be attempted.

iv. *Fourth period.*—The completion of range courses, rifle meetings, etc.

6. *Standard of training.*—Efficiency depends mainly on the organization of pre-camp training, and a standard at which to aim during the year's training should be fixed for each unit. A suggested standard is given as an example in Appendix II, although it must not be lost sight of that the ultimate aim is to reach the standard of the regular army as soon as possible after mobilization.

CHAPTER IV

DRILL

19. General remarks

1. Drill is the foundation of discipline and *esprit de corps* and forms part of the training of all infantry units. Its objects are :—

i. To compel the habit of obedience. During drill it becomes instinctive and automatic for the leader to impress his will on his subordinates, and for them to carry out his intentions exactly.

ii. To stimulate, by combined and orderly movement, the man's pride in himself and his unit.

iii. To enable bodies of troops to be formed up and moved, rapidly and without confusion.

iv. To restore the morale of troops which have been disorganized.

2. The drill included in this chapter is limited to close order movements necessary in a theatre of war; ceremonial drill (*see* Manual of Ceremonial) gives scope for further movements. Good drill does not depend on the number and complications of the movements performed, but on the manner in which it is carried out. A high standard of smartness in the performance of all parades and duties must be insisted on.

3. Instructions with regard to squad and arms drill are contained in the Manual of Elementary Drill (All Arms).

20. Formations

The formations described in this chapter include :—

i. *Close formation for assembly.*

The platoon in line (Plate II).

The company in close column (Plate III).

The battalion (rifle or mixed) in mass (Plate V).

ii. *Column of route for marching.* (Plates II and IV.)

In column of route men may march in fours or threes.

21. General rules

1. The essentials of good drill are :—

i. Clear and incisive words of command.

- ii. Silence by others than the commander.
- iii. All minds alert in expectation of the next order.

Too frequent correction of errors by subordinate commanders whilst drill is in progress prevents the men from concentrating their attention.

2. As a general rule, short periods of smart and steady drill are preferable to prolonged drill parades. It is the quality of the drill and not the time spent on it that is of importance.

3. The commander of any parade will place himself where he can best exercise command; the positions of subordinate commanders are shown in the Plates.

4. Dressing will be taken up by each man on the completion of each movement.

5. In column of route the left will direct, with the following exceptions:—

- i. In countries where the "off side" rule of the road obtains.
- ii. When the right is on the pivot flank.

22. Platoon drill

1. *Forming up and inspecting a platoon.*—The platoon will fall in in line. The inspection should usually be carried out at the order as follows:—

- i.

Platoon — Attention.	Fix —	}	Given by the platoon ser- jeant.
Bayonets.			
Open Order—March.			

The appointments, clothing, etc., will then be inspected by the platoon commander.

- ii.

Unfix—Bayonets.	}	Arms will then be inspected.
For inspection, port—Arms.		
Examine—Arms. (If required.)		

Arms will then be inspected.

- iii.

Platoon—Attention.	Close order	}	Given by the platoon commander.
—March.			
Number. Form—Fours. Form—			
Two—Deep.			
About—Turn. Form—Fours.			
Form — Two-Deep. About —			
Turn, etc.			

2. *A platoon in line forming column of route.*

- i. *Move to the right (or left) in column of route.*

Form-fours—Right (or left). Quick—march.

Supernumeraries will double to their places on the command **March.**

ii. In moving off in threes, the words "Form Fours" will be omitted and platoons will act as described in Manual of Elementary Drill (All Arms), 1934, Sec. 38, Note.

3. *A platoon in column of route forming line.*—A platoon in column of route may form into line forward, by forming platoon on the right or left, or to a flank by turning. The detail of these movements will be as for squad drill.

4. *Other movements.*—For drill purposes, platoons will be exercised in the movements detailed for squad drill (see Manual of Elementary Drill (All Arms)) the word *platoon* being substituted for *squad*.

23. Company drill

1. *A company in close column of platoons falling in with or without drum:*—

i. *With the drum.*—On the command *Fall in* from the company serjeant-major, the drummer will beat a double flam, upon which the right section commanders of each platoon will come to attention and take one pace forward (at the order). They will be covered off by the company serjeant-major, who will then give the command *Steady*. After a pause of four seconds the drummer will beat a flam, upon which the company will come to attention. The drummer will count a pause of two seconds and will then beat another flam, when the company will take one pace to the front. After a further pause of two seconds the drummer will beat a roll, when the company will take up its dressing and remain looking to the right. When the whole company is steady, the drum will cease to roll, finishing up with a sharp tap on the drum, when the men of the company will turn their heads and eyes sharply to the front. The senior officer on parade then gives *Company stand at—Ease. Call the roll*, upon which the officers will join and inspect their platoons.

ii. *Without the drum.*—When falling in without the drum the company serjeant-major will give the command *Fall in*, upon which the right section commanders of each platoon will take one pace forward (at the order). They will be covered off by the company serjeant-major, who will then give the command *Steady*. Upon this command the company will come to attention, take a pace forward and, after a pause, will take up its dressing as in Manual of Elementary Drill (All Arms), 1934, Sec. 19, 2. On completion of the dressing

the senior officer will give the command *Stand at—Ease*. *Call the roll*, upon which the officers will join and inspect their platoon.

iii. When a company falls in, with the drum, as part of a battalion, the right section commanders will, after taking the pace forward, turn to their right and take up their covering. On the command *Steady*, from the regimental serjeant-major, they will turn to their left and the dressing will be completed as above.

2. *A close column when halted forming column of route.*

i. **Advance (or retire) in column of route from the right (or left). Form fours—Right.**

The commander of the leading (or rear) platoon will give *No. . . . Platoon. Left (or right)—Wheel. Quick—March*, and each platoon commander will act similarly in time to gain his place in column of route.

ii. **Move to the right (or left) in column of route. Form fours—Right (or left).**

The commander of the leading (or rear) platoon will give *No. . . . Platoon, Quick—March*, and each remaining platoon commander will give *No. . . . Platoon, Left (or right)—Wheel. Quick—March* in time to gain his place in column of fours.

(a) Unless otherwise ordered, a company will move off from the right of the leading platoon, or from the left of the rear platoon.

(b) A company can be marched off from any platoon as follows :—

Advance (or retire) in column of route in the following order : No. 1, No. 2, No. 3, No. 4 platoon.

3. *A close column when halted moving to a flank in fours.*

Move to the right (or left) in fours. Form fours—Right (or left). Quick—march.

The platoon on the right or left will direct unless any other platoon is detailed to do so.

4. *A column of route forming forward into close column of platoons at the halt.*

At the halt. On the left. Form close columns of platoons.

The commander of the leading platoon will at once give *No. . . . Platoon. At the Halt. On the Left. Form—Platoon*. The commanders of the remaining platoons, on arriving at close column distance, will act in similar manner,

5. *A column of route forming close column of platoons at the halt facing a flank.*

At the halt. Facing left. Form close column of platoons.

The commander of the leading platoon will halt his unit and turn it to the left by giving *No. . . . Platoon. Halt. Left Turn*. The remainder will be led by their guides by the shortest route to their positions in close column, where they will receive the command *No. . . . Platoon. Halt. Left—Turn*. On the word *Halt*, the right guides will at once turn to their left and take up their covering and distance from the right guide of the platoon in front.

24. Battalion drill

1. For parade purposes, other than ceremonial, a battalion will be formed up in mass. Details of the normal positions, intervals and distances for a battalion in mass are given in Plate V. These details may be modified as may be dictated by the ground or other circumstances. In war, if there is a possibility of air reconnaissance or attack, companies should be suitably disposed to make use of available cover.

2. *A mass moving off in column of route.*

Advance (or retire) in column of route from the right (or left) in the following order . . .

The battalion commander will then give the order of march. The company commander of the leading company in the order of march will then give *No. . . . Company. Advance (or retire) in column of route from the right (or left) form fours—Right (or left)*. The commander of the leading (or rear) platoon will then give *No. . . . Platoon. Left (or right)—Wheel. Quick—March*, and then the remaining platoons of the company will be marched off by their commanders in succession in the same way. The remaining companies will successively be marched off in the same way, in time to follow the preceding company.

3. *A column of route forming mass facing in the same direction.*

At the halt, on the left, Form—Mass.

The commander of the leading company will at once give the caution *No. . . . Company. At the Halt. On the Left. Form close column of platoons*. The company will then act as in company drill. The remaining companies will disengage to the left, and will be led to their respective positions in mass, where close column of platoons will be similarly formed.

Mass can similarly be formed on the right.

4. *A column of route forming mass facing a flank.*

At the halt, Facing left, Form—Mass.

The commander of the leading company will at once give the caution *No. . . . Company. At the Halt. Facing Left. Form close column of Platoons.* The company will then act as in company drill.

As the leading platoon of each succeeding company arrives at the correct interval from the preceding company, the company and platoon commanders will act in a similar manner.

25. Dismissing

The parade will be dismissed in accordance with the instructions laid down in the Manual of Elementary Drill (All Arms), 1935, Secs. 27 ; 42, 6 ; and 72, 7.

CHAPTER V

FIELD FORMATIONS

26. General remarks

1. In the past, drill was an essential part of manœuvre in close contact with the enemy, and a large number of intricate movements were essential ; on the modern battlefield, manœuvre depends on the plan, the clearness of the orders given and the ability of subordinate leaders to make such use of ground, fire and formations as will enable them to achieve the object of their commander.

2. When a unit is liable to come under artillery or other long-range fire or to be subject to attack by aircraft, but is not committed to action, it may be necessary to adopt an open formation. The formations described in this chapter can be adapted to suit varying situations, according to the proximity of the enemy, the accidents of the ground and other considerations. Infantry commanders are responsible for ensuring that their commands adopt the formations best suited to the requirements of the moment. They must, by personal reconnaissance, or from reports of reconnoitring detachments, or, if this is impossible, by an intelligent study of the map and aeroplane photographs, appreciate the topographical factors such as obstacles, cover from fire and from view and likely enemy dispositions, and the effect which they will have on the best formation to be adopted. The power of quick manœuvre will depend on the system of control and the suitability of the dispositions adopted.

27. Formations

1. In deciding on the dispositions of his sub-units, an infantry commander must take the following factors into consideration :—

- i. The ground.
- ii. Enemy fire.
- iii. Control.
- iv. His frontage.
- v. Flank protection.
- vi. The maintenance of an adequate reserve, by disposing

his sub-units in depth, to ensure the maximum power of manœuvre.

2. Subject to the above, the formation adopted will usually fall under one of the headings illustrated in Figs. 1 to 5. Whatever the formation adopted, there must be nothing in the way of geometric rigidity, flexibility remaining always the primary consideration.

Note.—In the case of a platoon of three sections, the fourth sub-unit should be disregarded.

3. When a unit is committed to the attack, there can be no such thing as a regular formation, and sub-units will be given objectives. The nature of the attack and the considerations in para. 1, above, will, however, result in the actual formation approximating to one of the patterns described above. For example, in the prepared attack on a timed programme or with tanks when the enemy has been definitely located and the flanks of the attacking unit are protected by other troops, a formation approximating the "square" or the "T" will be most useful. On the other hand, in loose fighting when the enemy has not been definitely located, the maximum numbers will be required for manœuvre and a formation similar to the "diamond" or "Y" will often result.

28. Rapid deployment

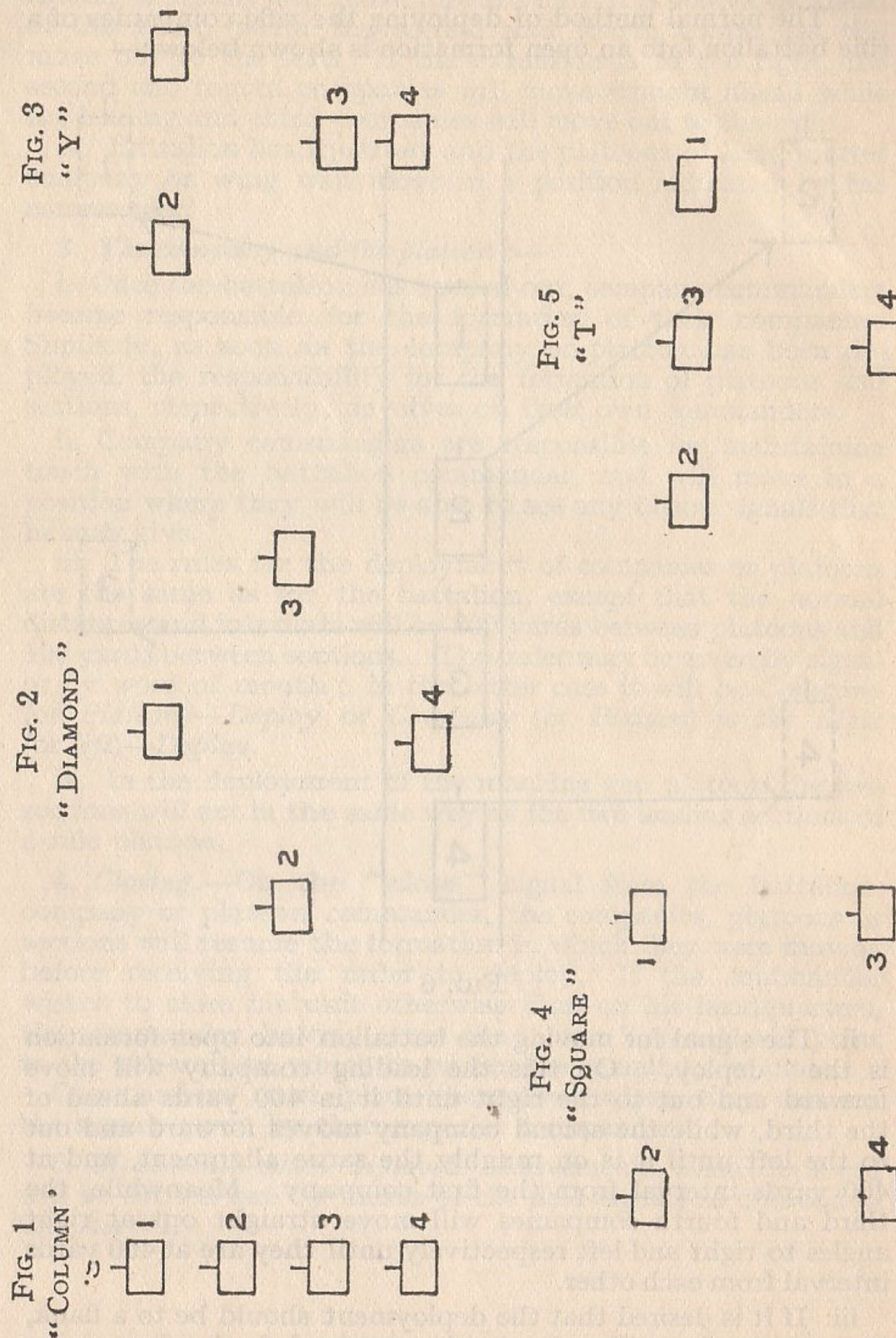
1. General remarks :—

i. On occasions speed in the adoption of an open formation may be of vital importance, and deployment must be practised during training so that all units may become thoroughly flexible in their movements.

It is easier to carry out movements which are thoroughly ingrained in the minds of the troops than to improvise them on the spur of the moment. When speed is of importance, the method of deployment described below will be adopted, sub-units moving on signals or short orders. Thus battalion and company commanders can retain control of their commands even though the latter are dispersed.

ii. The normal deploying intervals and distances laid down may be varied to suit the ground or other circumstances. They must not be applied rigidly, and it must be remembered that the object of deployment is to avoid casualties, which can best be achieved by the use of ground and available cover.

iii. Deployments will be carried out at the double unless the cautionary signal "quick time" is given before the deploy signal.



2. The battalion :—

i. The normal method of deploying the rifle companies of a rifle battalion into an open formation is shown below :—

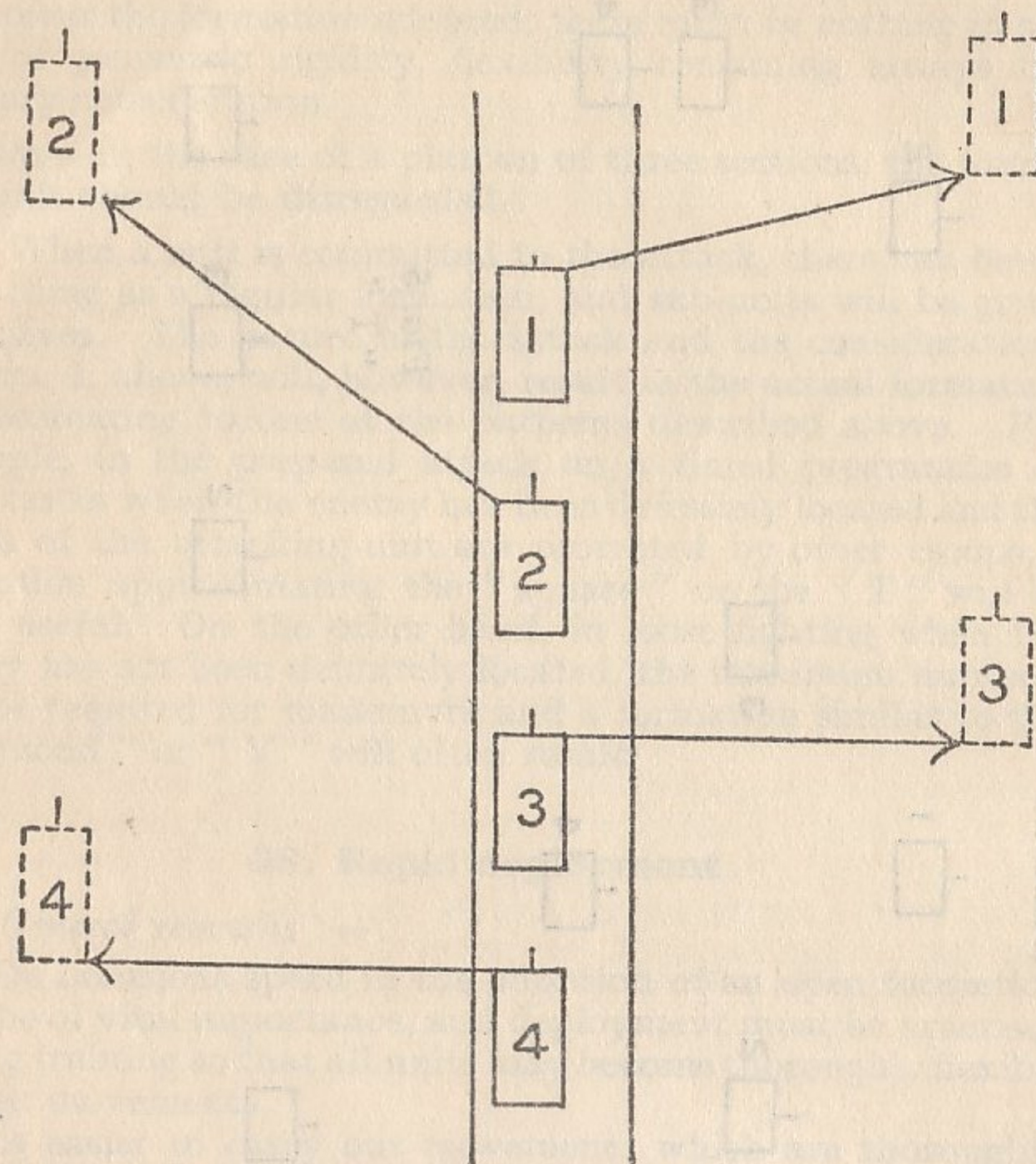


FIG. 6

ii. The signal for moving the battalion into open formation is the "deploy." On this the leading company will move forward and out to the right until it is 400 yards ahead of the third, while the second company moves forward and out to the left until it is on roughly the same alignment, and at 400 yards interval from the first company. Meanwhile, the third and fourth companies will move straight out at right angles to right and left respectively until they are at 400 yards interval from each other.

iii. If it is desired that the deployment should be to a flank, the commander will point to the required flank after giving the "deploy" signal. If the extension is to the left, the

leading company will move forward until it is 400 yards ahead of the third, while the second and fourth companies will move out to the left. If the extension is to the right, the second and fourth companies will move straight ahead while the leading and third companies will move out to the right.

iv. Battalion headquarters and the platoons of headquarter company or wing will move in a position indicated by the commander.

3. The company and the platoon :—

i. Once the battalion has opened out, company commanders become responsible for the formation of their companies. Similarly, as soon as the company or platoon has been deployed, the responsibility for the formation of platoons and sections, respectively, devolves on their own commanders.

ii. Company commanders are responsible for maintaining touch with the battalion commander, and will move in a position where they will be able to see any future signals that he may give.

iii. The rules for the deployment of companies or platoons are the same as for the battalion, except that the normal distances and intervals will be 200 yards between platoons and 100 yards between sections. The order may be given by signal or by word of mouth; in the latter case it will be *Company (or Platoon)—Deploy* or *Company (or Platoon) to the Right (or left)—Deploy*.

iv. In the deployment of the machine gun platoon the two sections will act in the same way as the two leading sections of a rifle platoon.

4. *Closing*.—On the "close" signal from the battalion, company or platoon commander, the companies, platoons or sections will resume the formation in which they were moving before receiving the order to deploy. If the commander wishes to close his unit otherwise than on his headquarters, the commander, having given the "close" signal, will point to the sub-unit on which he wishes the remainder to close.

Commanders must place themselves where they can see the signals given by their superior commander.

5. *Movements when deployed*.—Movements when deployed will be carried out by means of the field signals as detailed in Chapter VI.

CHAPTER VI

FIELD SIGNALS

29. General remarks

1. Control of troops, when deployed, can often be exercised better and more quickly by signals than by verbal orders.

2. In controlling troops by signals, a "short blast" of the whistle (*i.e.* "the cautionary blast") will be blown before the signal is made, in order to attract the attention of the troops. When he is satisfied that his signal is understood, the commander will drop his hand to his side, on which the units under him will act as ordered. Signals should be made with whichever arm will show most clearly what is meant.

30. Signals with the hand

The following "control signals" are used :—

1. **Deploy.**—The arm extended to the full extent over the head and waved slowly from side to side, the hand to be open and to come down as low as the hips on both sides of the body.

If it is required to deploy to a flank, the commander will point to the required flank after finishing the signal.

2. **Advance.**—The arm swung from rear to front below the shoulder.

3. **Halt.**—The arm raised at full extent above the head.

4. **Retire.**—The arm circled above the head.

5. **Change direction right (or left).**—The arm is first extended horizontally to the side in line with the shoulder. A circular movement is then made, on completion of which the arm and body should point in the required direction.

i. When troops are halted, the above signal means **change position right (or left)**.

ii. When troops are in field formation, in column of fours, or in file or in signal file, the above signal means **right (or left) wheel**.

6. **Right (or left) incline or turn.**—The body or horse turned in the required direction and the arm extended in line with the shoulder, and pointing in the required direction.

7. **Close.**—The hand placed on top of the head, the elbow to be square to the right or left according to which hand is used.

i. The above signal denotes **Close** (on the **centre**). If it is required to close on a flank, the leader will point to the required flank before dropping his hand.

ii. If, when on the march, it is required to halt as well as close, the leader will perform the halt signal before dropping his hand.

8. **Quick time.**—The hand raised in line with the shoulder, the elbow bent and close to the side.

9. **Double.**—The clenched hand moved up and down between the thigh and shoulder.

10. **Follow me.**—The arm swung from rear to front above the shoulder.

11. **Lie down.**—Two or three slight movements of the open hand towards the ground.

12. **As you were.**—The arm extended downwards, waved across the body, parallel to the ground.

13. For signals to be used for the control of machine gun fire, see Small Arms Training.

31. Signals with the rifle.

The following communicating "signals" are made with the rifle :—

1. **Enemy in sight in small numbers.**—The rifle held above the head, at the full extent of the arm and parallel with the ground, the muzzle pointing to the front.

2. **Enemy in sight in large numbers.**—The rifle held as in the previous signal, but raised and lowered frequently.

3. **No enemy in sight.**—The rifle held up at the full extent of the arm, the muzzle uppermost.

These signals may be used by scouts, etc., sent on ahead by their sections. Care should be taken that the signals cannot be seen by the enemy.

32. Control by whistle blasts

The following whistle blasts are used :—

1. **The cautionary blast (a short blast).**—To draw attention to a signal or order about to be given.

2. **The rally blast (a succession of short blasts).**—To denote close on the leader in wood, bush, fog or darkness, when the signal cannot be seen.

On the above blast being given, the men will double towards the sound of the whistle, and will rally on the leader, facing in the same direction.

3. **The alarm blast (a succession of alternate long and short blasts).**—To turn out troops from camp or bivouac to fall in or to occupy previously arranged positions.

4. **Enemy aircraft in sight.**—A succession of long blasts on the whistle. Since this signal may often be inaudible, a visual signal will also be used to attract attention, viz. both arms held above the head and the hands waved. On this signal, troops either get ready to fire, open out, or take cover, according to the orders in force.

5. **Enemy aircraft attack ended.**—Two long blasts repeated at intervals of five seconds. On this, all troops resume previous formations. Troops who have been firing will re-charge their magazines before moving off.

CHAPTER VII

TRAINING IN FIELDCRAFT

33. General remarks

1. Ground has a dominating influence on every phase of battle; it affects not only the plan of the commander, but the action of each individual soldier. The intelligent use of ground may often compensate for lack of fire power and allow freedom of manœuvre to be maintained.

2. This chapter deals with the use of ground from the point of view of the individual soldier and the smallest units; the use of ground by larger units and its effect on tactical dispositions are dealt with in subsequent chapters.

3. Training in the use of ground should begin at the outset of the soldier's service. It must be remembered that a large proportion of men have spent all their lives in towns, where they have been accustomed to the flat surfaces and restricted field of vision of streets, brilliantly lighted at night. In such men the instinct for the use of ground and darkness will be lacking; yet ground and darkness are among their most powerful allies in war.

Training must therefore begin with the most elementary work; nothing should be taken for granted, and the lesson taught in any one period must be restricted. The subject can generally best be taught by demonstration (*see* Training Regulations, 1934, Sec. 30), followed by ample practice.

4. A suggested syllabus of elementary training is given in the following sections; this is by no means exhaustive, and should be treated merely as a guide.

34. Individual training by day

1. *Stage 1. Cover from view.*—(*See* Infantry Section Leading, 1934, Sec. 32, 4, and 33, 4.) The object of this stage is to teach men how ground may be used for concealment at rest. It should bring out the different types of cover (particularly undulating and dead ground), the effect of skylines (it should be demonstrated that a skyline is relative to the observer's position and not necessarily the crest of a hill), the use of background and shadow, the effect of movement, the visibility of shining objects, etc.

It may be advisable to divide this stage into a number of lessons, which might be taught on the following lines:—On arrival, the squad is turned about while the demonstrators are concealed; the squad is turned about again and searches for them; the demonstrators then disclose themselves in various ways (*e.g.* by movement); the demonstrators then withdraw and the squad watches them double forward and occupy the same positions; the squad then examines each position in detail; finally the squad is given a piece of ground and the men told to conceal themselves on it, their selected positions being criticized.

Subsequent lessons can be taught in a similar way.

2. *Stage 2. Cover from fire.*—(See Infantry Section Leading, 1934, Sec. 47, and Manual of Field Engineering, Vol. I (All Arms), 1933, Secs. 33 to 47.) Men will be taught to appreciate the value of various types of cover as protection against small arms and artillery fire. This stage can be carried out in part during digging periods; demonstrations of penetration on the range can also be given.

3. *Stage 3. Ground for fire positions.*—(See Small Arms Training and Infantry Section Leading, 1934, Sec. 13.) This should include the method of approaching a fire position.

4. *Stage 4. Visual training.*—(See Small Arms Training.) The use which can be made of ground by the enemy should be studied particularly at this stage.

5. *Stage 5. Ground for observation.*—(See Infantry Section Leading, 1934, Sec. 32, 4.) This carries stage 1 a step further and deals with the selection and occupation of an observation post.

The following points should be dealt with:—The suitability of the position for the task in hand, the concealment afforded, the avoidance of obvious places, the approach to the position, the value of broken skylines, the avoidance of sudden movements. Men should be taught to keep well back from windows and doors when observing from buildings, and to avoid being silhouetted by keeping near the trunk when observing from trees.

6. *Stage 6. How to observe.*—(See Infantry Section Leading, 1934, 32, 3.) Men acting either as sentries or observers should know what to look for, where to look for it (by putting themselves in the enemy's place) and how to observe.

To teach this, the men should be placed in observation points, questioned on their task and how they propose to carry it out; other men representing the enemy then disclose themselves.

7. *Stage 7. Observation training.*—The object of this stage is to train men in mental alertness and observation. After a march to any point they should be questioned on the route taken, landmarks, distances, points of the compass, direction of the wind, obstacles, cover from the air, vehicles, etc., passed. Similar questions can be asked after almost any event until the men are constantly on the alert.

8. *Stage 8. Practice of cover and observation.*—To practise a combination of the previous lessons, divide the squad into groups, and let the men of one group conceal themselves in positions of observation; then let the remaining groups try to locate them within a time limit.

9. *Stage 9. Ground to assist movement.*—(See Infantry Section Leading, 1934, Sec. 33, 5.) This is similar to stage 1, only applied to movement. The following additional points should be brought out:—The necessity for looking ahead to select the route (men are inclined not to look far enough ahead and to take an easy first bound which will land them in difficulties later); to avoid crawling except for very short distances; how to crawl (the body resting on the knees, elbows and forearms, the head and buttocks kept down, the knees always behind the buttocks); when a man stops, he should remain motionless; when he has to cross an exposed place, he should do so at top speed; he should be quick at getting up and down; any incident that might distract the enemy's attention should be used to cover movement; he should realize the advantages conferred on him when the wind, rain or sun are in his enemy's face.

10. *Stage 10. The individual stalk.*—A definite point is selected, 200 to 600 yards away, where a sniper or patrol is supposed to be located, the object being to approach near enough to shoot with a certainty of killing.

The squad is given a few minutes to study the ground, to decide on the position from which to shoot and to consider the best way of getting there. Individuals may then be questioned and one or more detailed to carry out the practice within a time limit. The instructor and remainder of the squad proceed to the objective to view the action of the selected men.

The following points for discussion are suggested:—

i. *Reconnaissance.*—(The necessity for looking before leaping.) Did he try to locate the exact enemy position and whether there were any obstacles protecting it? Did he select his fire position beforehand?

ii. *Concealment.*—Did the route chosen offer the best chance of surprising the enemy?

iii. *Mobility*.—Was the "going" of the route selected good or difficult?

iv. *Protection*.—If risks had to be taken, were they taken early when there was less chance of being seen and hit?

11. *Stage 11. Scout training*.—(See Infantry Section Leading, 1934, Sec. 38.) During scout training, arrangements should be made for men to be faced with situations which will require different types of action. For instance:—(a) a single rifle shot from an enemy who cannot be located; (b) enemy individuals seen moving at various points; (c) an enemy machine gun which cannot be located; (d) an enemy machine gun definitely located. In the latter case they should be able to describe the position exactly. Scouts should be trained to spot gaps in the enemy line (see Sec. 35, 5, ii), and as portions of a reserve unit to report on the situation of forward units.

Section scouts must be used intelligently; scouts moving a short distance ahead of a section in open country are useless unless they can see more than the section commander.

12. *Stage 12. Keeping direction*.—(See Infantry Section Leading, 1934, Sec. 34.) Men should be taught the various aids for keeping direction in addition to the use of the map and compass. They should be able to point out on a map the route by which they have moved, and should learn to memorize a route shown them on a map. (Points to note:—distance to the object, direction, whether up or down hill, likely distant landmarks, cross roads, buildings, streams, etc., to be passed.) This stage of training is particularly important for guides and orderlies.

13. *Stage 13. Memorizing a route*.—Take men along a certain route along which they will later be required as guides. On return question them on landmarks, etc., noticed. This may also be practised with a view to the man acting later as a guide at night. It may also be carried out as a competition, men working in pairs, one describing the route and the other trying to find it.

14. *Stage 14. Maps and sketching*.—N.C.Os. and men who have an aptitude for it should be practised in making sketch maps and in panorama sketching. This is particularly applicable to men of the intelligence section.

35. Section training by day

1. *Syllabus*.—A full syllabus of section training is given in Sec. 14, 4. The training should begin with a demonstration of the various section formations (see Infantry Section Leading,

1934, Sec. 36); these formations should then be applied to the ground: sections will also be practised in movement through woods (Infantry Section Leading, Sec. 65).

2. *Patrolling*, both by day and night, should form the basis of section training; it brings out lessons of leadership, initiative, use of ground and co-operation, and a section which can patrol well will find little difficulty in dealing with other tactical situations. The action of patrols is described in Infantry Section Leading, 1934, Sec. 39.

The principles of patrol formations (Infantry Section Leading, 1934, Sec. 39, 7) include the provision of all-round protection. A man should be detailed to protect the rear and to keep out of danger so that, if the patrol is overwhelmed or pinned to the ground, he will be able to get back with a report. On occasions this man may be provided with a bicycle.

3. *Ground for fire positions*.—Sections will be trained in the use of ground for fire positions, both when acting as a rifle and as a light machine gun section. Among the more important points to be brought out are the following:—the fire position should be selected before movement is made; the necessity for balancing the conflicting claims of cover and fire production; the method of occupying the position (advance under cover to the rear of the position and then crawl forward); light machine gun section handling (see Small Arms Training); a good light machine gun position should provide a cover for the men with the gun, a wide arc of fire, and fire positions for the remainder of the section.

4. *Cover from view*.—Section commanders must avoid leading their sections into cover which is in sight of the defenders, and is merely cover from view. If seen moving to such cover, they will provide a first-class target for enemy automatic weapons.

5. *Exercises*.—Examples are given below to show how section training in the use of ground may be carried out. Many similar exercises can be devised, but care must be taken that they do not develop into games of hide-and-seek. Boldness and speed should be encouraged by fixing a time limit.

i. *Section stalk*.

The object of this exercise is to practise the combined use of ground and formations. The preliminary arrangements required are similar to those for the individual stalk. The objective should be approximately 800 yards away.

The section commander is given a few moments to decide his ultimate fire position, his line of approach and the formations to adopt at various stages.

The points of discussion are similar to those for the individual stalk, with, in addition, leadership and control, suitability of formations, action of individuals.

ii. *Infiltration exercises.*

A piece of ground should be selected where two good observation positions exist 200 to 400 yards apart. At each of these points a section or observation post is established. Other sections are taken to a position about 600 yards away and are given in succession a line of advance, an objective or a subject for report which will carry them beyond the observation positions. Men then consider where the enemy observation posts are likely to be, and select the route to be followed. Sections then carry out the advance in turn. The observation groups should be supplied with blank ammunition, and, when they fire a shot, every man should remain motionless while the firer points out his target to an umpire. On a whistle being blown, the exercise continues.

iii. *Patrol competition.*

A patrol competition on the following lines may be carried out.

Object.—Training in speed over country, use of ground and quickness of observation.

Method.—Two patrols race towards a prominent hill at an angle, starting the same distance from the hill. An umpire accompanies each patrol. The patrol which first sees the other wins; if neither is seen, the first to reach the objective wins. Patrols should not be told on which flank the neighbouring patrol is moving, or it will only protect itself and observe on that flank.

36. Training by night

(See also Chapter XIII; Field Service Regulations, Vol. II, 1935, Chapter VIII; and Infantry Section Leading, 1934, Sec. 36.)

1. *General remarks.*—The chief object of this training is to accustom the soldier to moving in the dark, so that individuals and units can act with confidence by night. The instruction will begin during individual training and will be carried out progressively.

The main points to remember are:—that sight must give place to hearing to a great extent; that the avoidance of noise is therefore of paramount importance; the importance of skylines and the consequent value of low ground both for observation and to avoid being seen; the necessity for daylight reconnaissance and the difficulties of control.

The following paragraphs may be taken as a general guide as to the methods to be adopted, only the more elementary being used in the period of individual training.

2. *Visual training.*—One man of a section should march away and be stopped by voice or pre-arranged signal as soon as he is out of sight. He should call out the number of paces which he has taken. The same man should then advance towards the section from some distance farther off and be stopped as soon as he becomes visible, later counting his paces to the section.

Points to bring out:—

- i. Ability to see in the dark increases with practice.
- ii. Objects are more visible when the moon is behind the observer than when it is in front of him.
- iii. An observer may stand up when he has a definite background and should lie down when he has not.
- iv. The lower he is to the ground, the more extensive is his skyline.

When the men have been practised in observing a man approaching at a walk, they should be similarly practised in observing a man who is endeavouring to approach unseen.

By comparison they should be taught the advantage of observing from low ground. Demonstrations should be given to show the distances at which a lighted cigarette, a match, etc., can be seen.

3. *Training in hearing.*—Instruction will be carried out on similar lines to visual training. At first the advance of a single man should be listened for; gradually the number should be increased, so that facility may be acquired in judging the strength of a party approaching.

Listening should be practised on various types of ground, e.g. open and close country, across and in valleys, in woods, etc.

Demonstrations should be given to show how far voices, whispering, etc., carry at night, and the noise made by rattling equipment and water bottles.

To exercise men, place them in a position of observation and arrange for noises to be made at pre-arranged times, distances and directions (e.g. talking, digging, wire cutting, wiring, coughing, etc.). Each man should explain the sound, estimating its distance and direction. This should be carried out in varying types of weather.

4. *Movement by night.*—At first individual instruction should be given without arms; later men should be taken

out in marching order and should practise advancing noiselessly on roads, and in various formations over open ground, with whispered words of command. Precautions should be taken to prevent equipment rattling, and arms must not be allowed to clash.

On soft ground it is generally better to place the feet to the ground heel first, and on hard ground toe first. In walking in grass, etc., the feet should be raised above the grass; in crossing a difficult piece of ground, advantage should be taken of other sounds to cover the noise. When a signal light is put up, men should, if possible, fall flat on the ground before the flare explodes; if caught unexpectedly by a flare, they should remain motionless and move immediately the flare goes out. A flare should never be looked at, as to do so makes it impossible to see in the dark for some minutes. Men should also be practised in keeping touch. Men should first study by day the country over which they are to move by night, and instructions should be given by question and answer on such points as route selected, obstacles to be crossed, and means of keeping direction.

Silent movement may be practised by day by blindfolding one man of the squad, allowing the remainder to approach him from different directions. When the blindfolded man hears a sound, he points in that direction. Men will see how near they can get to him without being discovered.

5. *Keeping direction.*—Men should be trained to recognize the Pole Star (or in the Southern Hemisphere the Southern Cross). They should understand how to use the moon and even the wind. They should note by day roads, tracks and landmarks which will stand up in silhouette against the sky and ground contours.

To train men, take them over a route by day, let them make notes (e.g. "600 yards forked tracks, keep left," "100 yards on track cross stream, lone pine tree on skyline half left from line of advance"). Then with their notes let them follow the same route by night. In more advanced stages, notes can be made from the map and from an observation point, instead of from the actual route.

All officers and senior N.C.Os. must understand how to use the prismatic compass by night.

6. *Carriage of tools.*—Men should be taught and practised in the methods of carrying entrenching tools quietly.

7. *Crossing of wire obstacles.*—If wire is encountered, men should be taught to crouch low, so that it can be seen in detail against the sky. If they have no wire cutters, the easiest way of crossing it is to go underneath, moving on the

back and holding the strands clear of the body; with wire cutters the lowest strands may be cut and normally crawling resorted to. To cut wire, two men should work together, one holding the wire close to the cutters on each side while the other cuts; this muffles the sound and prevents the loose ends from flying back. A man working alone should cut the wire near a post, holding the wire close to the post and cutting between his hand and the post.

8. *Intercommunication and verbal messages.*—Messages should be passed in a whisper from man to man, the final message received being checked with the original message. Orderlies should also be trained in carrying messages at night.

9. *Individual stalk.*—Practice of men in pairs may be carried out on the general lines of the individual stalk (see Sec. 34, 10).

10. *Reconnaissance before advances and attacks.*—At first the point marking the objective for the night attack should be either some conspicuous object or should be marked by a flag. Men should not be allowed to approach nearer to the position than a point from which they might hope to avoid detection in daylight. From this point they should survey the line of approach to the objective by day. After dark men working in pairs should advance on the objective from the point from which the reconnaissance was made by day. Men should be instructed in taking notes (written or mental) during the day reconnaissance, and should, before the night work, be questioned on the same. As proficiency increases, the same procedure should be adopted with less conspicuous objectives.

This exercise may also be carried out by sections or platoons after reconnaissance by their commanders.

11. *Section as a patrol.*—Sections should also be practised in night patrolling (see Infantry Section Leading, 1934, Sec. 40).

12. *Patrol competition.*—Two sides form opposing outposts about $\frac{1}{2}$ mile apart, flanking boundaries being fixed according to the number of sections, so that each section is responsible for 60 to 150 yards of front according to the darkness of the night. Behind each line of protecting sections place a number of lanterns, the defenders not to be within 200 yards of their own lanterns. At a fixed zero each side may send out patrols with the object of marking the exact position of the outposts, and, if possible, of stealing a lamp. Any patrol challenged within a certain distance, according to the darkness of the night, to return to its own lines. An umpire should go with

each patrol. Marks to be given for (a) reports of enemy positions; (b) lamps stolen; (c) reports of enemy patrols; (d) enemy adjudged captured.

13. *Compass march*.—All platoon officers should carry out a compass march over open country first as individual training, and later leading their platoons.

This may be carried out as a competition on the following general lines:—Platoons report in succession at a rendezvous, where they are given a compass bearing and a distance which will take them to a control point. At the control point is an officer with a lantern, concealed except at close quarters. Platoons have to find this officer, who gives them another bearing and distance to the finishing point. Marks to be given for speed, formation, equipment of platoon, silent approach to control point, etc.

14. *Subsequent training*.—This should deal with normal operations of war. The training of platoons in patrolling at night is of the greatest value.

PART II—WAR

CHAPTER VIII

BATTLE PROCEDURE

37. The time factor

1. Time is a vital factor in battle, and every device should be used to shorten the period of reconnaissance and preparation, and to make it effective. To achieve this object, the essentials are:—

- i. Intelligent anticipation by all commanders.
- ii. The issue of warning orders.
- iii. An organized system which avoids unnecessary delays.

Men who go into action harassed and hurried, feeling that adequate preparations have been impossible, will lose much in morale.

2. The procedure described below has as its object the staging of an operation with the maximum efficiency in the time available. This time will vary in all situations, and will range from ample time to occasions where tactical exigencies demand immediate action. Hence, while the principles given in this chapter are constant, the comprehensiveness of preparatory measures must vary with the tactical situation.

38. Preparatory stages

The preparation of an operation, which is described generally in Field Service Regulations, Vol. II, 1935, Sec. 56, 1, may usually be divided into three stages, although these need not necessarily be consecutive. By foresight and system it should often be possible for portions of the different stages to be carried out concurrently.

These stages are as follows:—

Stage I.—(a) The reconnaissance by the commander initiating the plan and his assistants.

(b) The moves of subordinate commanders to a rendezvous at which they may be given orders.

(c) The moves of the fighting troops and administrative portions of the force to assembly areas.

Stage 2.—(a) The issue of orders by the commander.

(b) Reconnaissance by subordinate commanders and their assistants.

(c) The moves of fighting troops to unit or sub-unit assembly areas.

(d) The opening of headquarters for battle and preparations for intercommunication.

(e) Administrative preparations.

Stage 3.—(a) The issue of orders by subordinate commanders.

(b) The moves of fighting troops to the areas from which they will deploy.

2. During the course of deployment one or more assembly positions may be occupied, formations and units dispersing as the plan takes shape. These positions should be selected with a view to concealment both from ground and air observation, and, on arrival, arrangements will be made immediately for local protection.

Every opportunity must be taken, while in a position of assembly, to carry out the administrative arrangements necessary for battle.

3. Before going forward to reconnoitre or to receive orders, commanders will issue such warning orders to enable their subordinates to begin their preparations for battle. The detail which can be given in these orders will depend on circumstances. If the situation is vague, it may be possible in the first orders merely to fix an assembly position for his command and a rendezvous where he can meet his subordinate commanders. On other occasions it may be possible to give further details, and, whenever possible, the orders should contain the following :—

i. The situation.

ii. The probable action.

iii. A rendezvous and time at which he will meet subordinate commanders for the issue of orders.

iv. The assembly area or areas to which fighting troops and administrative echelons will move.

v. The position of headquarters during the preparatory stage.

vi. Any reconnaissance of the surroundings routes to be followed, etc., that may be desirable to save time.

4. It will also assist subordinate commanders if they can be told at this stage that they will not be required to move from the assembly area before a certain hour. Any indication that can be given of the probable area in which sub-units

will operate will enable subordinate commanders to think ahead and even to make a preliminary reconnaissance.

39. Organization for command

1. *General.*—For the speedy issue of orders and preparations for reconnaissance, it is essential that the personnel required should be immediately available; this can best be achieved by a system of grouping. No two situations will, however, be alike, and any system adopted slavishly will fail. The method described below, whilst being accepted as the normal procedure, should be governed by the general situation prevailing at the time, and is not intended to cramp the initiative of commanders when conditions make modifications desirable.

Whatever organization is adopted, it should be elastic. The principles to be fulfilled are that a commander is readily available when wanted, that he has his own means of communication and that a unit is always left with a commander who has sufficient means to manœuvre it.

When action is imminent, the personnel required for command can be organized into the following groups, each containing the officers who will be required with their means of communication.

2. *The commander's group.*—This consists of the commander himself, the commanders of the principal support units under his command or supporting him, a staff officer and the necessary personnel to carry messages or to act as car drivers or horse holders.

A commander, accompanied by this group, can, on receiving an order from his superior or meeting a new situation, proceed immediately on his reconnaissance. He has with him the officers necessary for making his plan and also the facilities for the issue of any preliminary orders (*see* Sec. 38, 3).

Thus the battalion commander's group might consist of the commanding officer; the officer commanding the machine guns and anti-tank guns; the adjutant or intelligence officer; the necessary mounted orderlies or cyclists; and the commanders of any other arms supporting his battalion. The signal officer will often accompany this group until the outline plan has been formed and the general area for headquarters has been selected; he will then leave the group to make a detailed reconnaissance and preparations for the establishment of headquarters (*see* Sec. 43, 1).

If the unit is already in action (as in the case of a reconnaissance before a withdrawal), the next senior, or another representative should, as a rule, act for their commanders as members of this group.

3. *The subordinate commander's group.*—This consists of the commander's group of the next lower units or sub-units, and includes those to whom the commander or members of the commander's group give their orders. It is unnecessary and often undesirable for all those in the subordinate commander's group to be present when the commander gives his orders, but it is important that they should be readily available.

The subordinate commanders' group for a battalion might thus include rifle company commanders, machine gun and mortar platoon commanders, the anti-tank gun commander, orderlies and horse holders (or drivers).

The support unit commanders, having accompanied the commander on his reconnaissance, will already know the commander's plan and will therefore be in a position to give warning orders to their subordinates. It is for this reason that in the organization of the groups the supporting fire unit commanders have been placed one echelon higher than the corresponding rifle unit commanders. It will usually be advisable for a machine gun platoon commander or his orderly to carry a director.

4. The remainder of the battalion, under the next senior officer, will, in the meantime, be making such preparations for battle as are possible, and moving to assembly areas if they are known. The establishment of a headquarters for battle may also be possible, but it is essential that the officer left in command should retain with him sufficient signallers and runners to be able to manoeuvre the battalion.

40. Reconnaissance

1. The principles of reconnaissance are given in Field Service Regulations, Vol. II, 1935, Secs. 31 and 33.

Information inside the battalion is obtained by the personal reconnaissance of officers, by the intelligence section (*see* Sec. 45), by the action of patrols (*see* Chapter IX) and by constant observation by all sub-units in close contact with the enemy. Troops in touch with the enemy should be active in ascertaining and reporting his dispositions, and the dispositions of troops on their flanks. Units in reserve should be constantly engaged in discovering the situation of troops in contact with the enemy and the best lines for movement, so that no order will find them unprepared.

2. An officer or N.C.O. carrying out a reconnaissance must plan it with the same care as any other operation of war (*see* Field Service Regulations, Vol. II, 1935, Sec. 35, 1). He should take the following successive steps:—

- i. Ensure that he has all available information with regard to the situation.
- ii. Be clear in his mind of the object of the reconnaissance.
- iii. Consider what he is going to look for to fulfil that object.
- iv. Before starting, study the map to get as much information as possible regarding the ground, likely view-points, routes, obstacles, etc.
- v. Consider time available. This will usually be limited and he should ensure that adequate time is available for reconnaissance by subordinate commanders.
- vi. Then make a mental plan for the reconnaissance, including route and time table.
- vii. Before setting off, leave information which will enable him to be found at short notice if urgently required.

3. The extent of the reconnaissance will depend on the time available, and, when time is limited, the reconnaissance of higher commanders should be curtailed rather than that smaller units and sub-units should be hurried into action with inadequate time for preparation.

41. The plan

(*See Field Service Regulations, Vol. II, 1935, Sec. 12*)

On orders received from his superior and as a result of his reconnaissance, the commander will be in a position to make his plan. For success in battle a unit must be engaged in accordance with a definite plan, and must not be permitted to drift aimlessly into battle. Every man should be clear with regard to the object and should go into battle to attain that object; this will rarely be possible unless the plan is simple.

42. Issue of orders

(*See Field Service Regulations, Vol. II, 1935, Secs. 14 and 15*)

Having made his reconnaissance and decided on his plan, a commander will issue his orders. The place selected for the issue of orders may often be adjacent to a prominent view-point, which, on account of enemy observation, should be approached by the minimum numbers. In such cases the rendezvous selected should be well under cover, and arrangements will be made to ensure that only those actually required by the commander move forward to the view-point. The commander will usually first point out the landmarks and other

tactical features and then withdraw under cover for reference to the map and the actual issue of orders. Throughout the battalion orders will usually be issued verbally (*see* Field Service Regulations, 1935, Sec. 15, 3). Watches will be synchronized at the same time. Subordinate commanders will make notes of essential points, which will be checked by the battalion commander.

43. Control of headquarters

1. An efficient headquarters is essential in every unit, and, without such efficiency, the efforts of the commander will often be nullified. The effectiveness of headquarters depends largely on the suitability of the site selected, the organization of the various portions of headquarters and the means of communication.

2. The position of headquarters should be fixed as early as possible. A commander setting out on his reconnaissance will, however, often be unable to choose the site personally, and in such cases will give a general indication of the area in which he wishes them to be, leaving the detailed reconnaissance to some other officer. In the case of companies, the detailed selection of headquarters will often be made by the C.S.M.

The site selected will be governed primarily by the following factors:—

i. *Intercommunication*.—Due regard should be paid to signal facilities, and lines of approach to the forward area. Superior commanders may define the approximate areas in which subordinate headquarters should be located, in order to fit in with the signal plan.

ii. *Co-operation*.—The headquarters should be within easy access of the commanders of supporting arms.

iii. *Control*.—The headquarters should be situated within easy access of the reserves and, if possible, there should be a good view-point over the battle area within easy reach.

iv. *Security*.—Obvious places such as cross-roads, etc., should be avoided, and due regard should be paid to concealment from the air. A police post should be established, to ensure that visitors approach headquarters by a covered route and that tracks are not made which would indicate the position on aeroplane photographs. The cars of officers visiting headquarters should be parked under cover.

v. *Disturbance*.—The vicinity of roads which will be crowded with traffic and personnel seeking miscellaneous information

should be avoided, or the commander will be constantly interrupted and prevented from concentrating on the task in hand.

vi. *Accessibility*.—At the same time headquarters should be easily accessible. Notice boards pointing to headquarters and lamps at night should be placed in a prominent position on the nearest road, and, if necessary, a police post should be established to direct visitors.

3. When the site has been fixed, the R.S.M. (or the C.S.M. in the case of a company) will organize the lay-out in detail, groups being suitably dispersed and due regard being paid to concealment. The R.S.M. will at the same time make the necessary arrangements for local protection, including alarm posts, anti-gas and anti-aircraft defence.

4. Immediately the first position has been organized, an alternative position should be reconnoitred, to be occupied in the event of the first position becoming untenable. A plan will be prepared for the rapid move of headquarters when necessary, so that it may take place without dislocation of command.

5. As soon as the site for headquarters has been selected, an orderly will be sent to the next higher formation with details of the position; here he will remain until required to act as guide to the first orderly with a message to his unit.

6. Commanders should not be tied to their headquarters during operations and depend on others entirely for information. There are occasions when a commander's presence at his headquarters is essential; on the other hand there are many occasions when it is of much greater importance that he should go forward to see the ground and the situation for himself, to get in touch with his forward sub-units and thus control the situation personally. In such cases an officer should be left at his headquarters.

7. The personnel of battalion headquarters should be kept to a minimum (those not required remaining with "B" echelon of the transport), and will be organized as follows:—

i. The C.O.'s group (including the adjutant, R.S.M. and clerks).

ii. The intelligence section.

iii. The signal office (including signallers and runners).

These groups should be located at a sufficient distance apart to avoid interference with each other or being hit by one shell; they should, however, if possible, be within hailing

distance of each other. They will be disposed as far as possible to avoid the movement of individuals: thus the signal office would be nearest to the main routes of despatch riders and orderlies, next would be the C.O.'s group, and beyond, located with a view to covered communications forward, would be the intelligence section. Some distance away, approachable if possible by a covered route, would be the latrines, transport and the officers' mess, etc.

44. Intercommunication

(To be read in conjunction with *Field Service Regulations*, Vol. II, 1935, Sec. 16)

1. Instructions with regard to the tactical employment of the signal section are contained in Signal Training (All Arms). The means of intercommunication within the battalion are visual signalling, orderly, cable, patrols and liaison personnel. The signalling officer is responsible for employing the signallers and orderlies according to the tactical requirements of the situation, in order to establish a system of communication which will meet the needs of battalion headquarters and companies. Except in an emergency, trained signallers should not be employed as orderlies.

2. When operations are imminent, orderlies from companies will be sent to battalion headquarters to facilitate communication between the battalion and company commanders; additional arrangements, if necessary, should be made for communication inside companies. The battalion signalling officer should be given early information of all intended moves, and keep himself informed as to the progress of the battle generally, in order that communications may be maintained without interruption.

In the early stages of the battle his position is forward, in touch with the battalion commander with sufficient signallers for the latter's requirements. His first duties will be reconnaissance and the organization of the system of communications in accordance with the battalion commander's plan. In the later stages his duties are supervision and reconnaissance for the next move.

3. The battalion signal system will usually consist of a headquarter signal office at battalion headquarters with connection to brigade headquarters and to companies, and on occasion there will also be connections to flanking battalions and attached artillery. The equipment for these connections consists of motor bicycles, bicycles, Lucas lamps, heliograph, flags and cable (six miles).

4. The signal personnel * will normally be divided into four parties, whose composition and duties will vary with circumstances. In normal cases, "A" party establishes the battalion signal office and works to outlying stations and to brigade. The number of stations to which this office can work is strictly limited both by personnel and equipment. "B" party may be in reserve to establish new headquarters in case of a move, and to provide reliefs for "A" party. "C" party consists of the signallers attached in pairs to outlying stations, while "D" party will often be employed for the laying and maintenance of cable.

5. *Aircraft*.—Infantry can indicate its position to close reconnaissance aeroplanes by means of ground strips, flares, lamps or any other suitable means available.

The following will be laid down in orders:—

- i. The means of signalling to be used.
- ii. Whether the signals will be made by the most advanced troops or by company or other headquarters.
- iii. Whether the signals will be made at specified hours or on reaching definite objectives.

These signals will be made only when called for by the aeroplane observer firing white signal lights to indicate that he is in a position to observe such signals.

When flares are used, they will be lighted in groups of two.

In exceptional cases information may be required as to the position of troops although arrangements for recognition signals have not been laid down in orders as above.

In these cases the aeroplane will be instructed to call for the signals by firing white signal lights, and troops in the vicinity of the aeroplane will thereupon comply by making signals with such means as are available.

45. The intelligence section

1. The duties of the battalion intelligence section are as follows:—

- i. To collate the information received from all sources regarding the ground, the enemy and the situation of the forward troops of the battalion and of units on its flanks; and

* Note.—The present establishment of signallers is as follows:—

				Rifle Bn.	Mixed Bn.	M.G. Bn.
Officers	..	..	..	1	1	1
Serjeants	..	..	..	1	1	1
Corporals	..	..	..	1	1	1
Signallers	..	..	..	25	31	25
				28	34	28

to keep at battalion headquarters a map or sketch on which the situation is marked.

ii. To provide the commanding officer with an additional source of information, by organizing observation of the battalion area and by carrying out special reconnaissance tasks when required.

iii. To keep the commanding officer informed of the situation and to distribute information to brigade headquarters, to flanking units, and within the battalion by means of intelligence reports, messages, etc., according to the circumstances.

2. Continuity in the work of the intelligence section is essential; in order to ensure it, the battalion intelligence officer, or in his absence the senior N.C.O. of the section, should be at battalion headquarters.

3. The intelligence section* can be organized into three groups, each of two observers; whenever possible, one of these groups should be in reserve ready to undertake any special tasks that may be required—*e.g.* to check a doubtful piece of information, or to carry out a special reconnaissance.

4. The battalion intelligence officer must at all times be conversant with the situation and with the plans and intentions of his commanding officer, in order that he may be able to judge what information is likely to be required and take timely steps to secure it.

5. During the period of preparation for battle the battalion intelligence officer should usually accompany the commanding officer until the area in which the battalion is to be employed is known; he may be able to assist the commanding officer by carrying out a rapid reconnaissance of the area, selecting likely assembly area and observation posts, and obtaining information as to the ground and situation.

6. Once the plan is framed and deployment takes place, the first duty of the battalion intelligence officer is to arrange for organized observation of the battalion area. One observation post will usually be necessary in the vicinity of battalion headquarters, and this may be supplemented by another sited so as to have closer observation of the forward area, or of any specially important or dangerous locality. Valuable information can often be obtained by close liaison with artillery units covering the front, which will be informed of the situation from the artillery observation post. Arrangements for

* Machine gun battalions have no intelligence section. The strength of an intelligence section in a rifle or mixed battalion is 1 officer, 1 serjeant and 6 rank and file.

intercommunication between observation posts and battalion headquarters are necessary.

7. The adjutant and battalion intelligence officer should always be in close touch, and each should be prepared to act for the other. During operations both of them should not normally be away from battalion headquarters.

46. Control of transport

1. Battalion transport may be divided into two echelons, although there is no fixed allocation of vehicles to each echelon. "A" echelon will consist of such transport as is required with the battalion, in order that it may function efficiently in the battle; it will usually include the vehicles for machine guns, light machine guns, mortars, anti-tank weapons, ammunition, grenades, signalling stores, tools and medical equipment.

2. The dispositions of the vehicles of "A" echelon especially must receive careful attention, as casualties will cause lack of mobility. Company vehicles remain under company control or, when unloaded, may be concentrated under the transport officer; the decision will depend on the urgency with which they are likely to be required during the action.

3. "B" echelon will consist of vehicles for water, cooking and officers' mess stores, together with such other vehicles as can safely be included in it. When considered desirable, the "B" echelon transport of battalions may be grouped and moved under brigade control.

4. Except during short halts on the march, transport must clear the road to enable mechanized units, reconnaissance parties, etc., to pass unimpeded. If a halt can be foreseen, an officer should go forward to reconnoitre for a suitable place off the road where the transport may be parked.

47. Ammunition supply

1. *General principles.*—The fundamental principle of ammunition supply is that ammunition must be passed systematically and automatically from rear to front to replace that expended in battle. Troops in action should never have to turn their backs on the enemy to fetch further supplies.

A commander's power of manœuvre is largely dependent on ability to keep his troops supplied with ammunition. Careful arrangements for ammunition supply must therefore form part of every plan, whether in attack or defence. Each echelon must be constantly aware of the position of, and be in communication with, the echelon next in front of it, so that the quantity and nature of the ammunition wanted can be sent forward promptly to the points required.

All expenditure from the various ammunition echelons must be replaced immediately.

2. *System of distribution in front of railhead.*—The reserves of ammunition for all weapons of infantry units held in advance of ammunition railhead are distributed from rear to front in the following echelons :—

THIRD LINE

i. The *corps ammunition park*, which will be divided into sub-parks, replenished from railhead.

SECOND LINE

ii. The *divisional ammunition company R.A.S.C.*, which replenish from the corps ammunition park at the divisional ammunition refilling points and deliver to brigade ammunition reserve, if one is formed, or to battalion ammunition reserves.

FIRST LINE

iii. The *brigade ammunition reserve*.—This reserve is not a permanent organization, but its formation will be a normal procedure, a proportion of ammunition vehicles being withdrawn from units as necessary.

iv. The *battalion ammunition reserve* is carried in the battalion transport.

v. The *company ammunition reserve* is carried in the company transport.

The amount of ammunition carried in the various echelons may be found in war establishments.

3. *The divisional ammunition company :—*

i. The divisional ammunition company carries a supply of ammunition for all weapons of units of the division.

ii. On the march the divisional ammunition company will usually move in rear of the fighting troops of the division. When an action is imminent, portions of the divisional ammunition company may be detached and located in more forward positions. These detachments are termed "ammunition points" (A.Ps.) and may vary from a few lorries to a complete section, holding all natures of ammunition.

The position of ammunition points will be determined by the staff and notified to units in orders.

iii. Before an action the commander of the divisional ammunition company, or the officer i/c the ammunition point, will :—

(a) Send forward a representative to ascertain the position of the troops which he has to supply.

(b) Send a motor cyclist orderly to the commander of each of the brigade ammunition reserves. This orderly will bring back the demands for ammunition and guide the lorries of the divisional ammunition company forward.

(c) Send forward ammunition during the action as demanded by the commanders of the brigade ammunition reserves. The lorries conveying this ammunition will normally unload and return to the divisional ammunition company or ammunition point as soon as possible.

4. *The issue from, and replenishment of, the battalion S.A.A. vehicles :—*

i. The ammunition available in an infantry battalion is distributed between the man and first line transport vehicles.

ii. A brigade reserve, under a selected officer, will normally be formed by detaching from each battalion as many of the S.A.A. vehicles as the brigade commander may think fit.

The brigade reserve forms a link between battalions and the ammunition company; although intended for the infantry brigade, in case of necessity it will supply ammunition to any troops engaged.

It will not normally be formed until action is likely, and thereafter will move as the brigade commander may direct.

If a battalion is detached, it will usually take the whole of its S.A.A. vehicles with it.

iii. The commander of the brigade ammunition reserve will :—

(a) Notify the ammunition company directly a brigade reserve has been formed; the commander of the ammunition company will then send forward a representative to ascertain the best route to it and attach a motor cyclist to remain with it.

(b) When necessary, send back this motor cyclist to the ammunition point or ammunition company, in order to bring forward ammunition to the empty vehicles of the brigade reserve. The request for the amount of ammunition required will be in writing, and will state the number of boxes by natures, *i.e.* machine gun, rifle, etc. The motor cyclist orderly will be used only to take demands for ammunition and to act as a guide when the ammunition demanded is sent forward to the brigade reserve.

(c) Retain empty vehicles with the brigade reserve until reloaded or, if the ammunition point is conveniently

situated, send them back there to refill. This procedure may be preferable in order to avoid bringing forward the larger and more conspicuous vehicles of the divisional ammunition company.

- (d) When required, replenish battalion ammunition reserves by sending forward vehicles containing the natures required.

It must be remembered that machine gun ammunition is issued packed in stripless belts, and care must be taken that it is kept separate from ammunition for rifles and light machine guns.

iv. The S.A.A. vehicles remaining with each battalion after the brigade reserve has been formed will move in rear of the battalion and constitute the battalion reserve.

v. When contact with the enemy is probable, a battalion commander may increase the number of rounds carried by each man of rifle sections from the battalion reserve, taking care to replace these issues from the brigade reserve. In deciding on the amount to be issued, he will bear in mind the importance of maintaining the mobility and fighting efficiency of the men.

vi. On deployment, ammunition vehicles of the machine gun company in an infantry (mixed) battalion will normally be located with the battalion reserve and the machine gun company commander will be responsible for the forward supply from this reserve, within such limits as may be laid down by the battalion commander. In an infantry (machine gun) battalion vehicles will normally remain with companies.

vii. The portion of the battalion S.A.A. reserve not allotted to companies will be under a responsible N.C.O.; at the outset it will be retained in the hands of the battalion commander and will move as directed by him.

The distribution in action of the battalion S.A.A. reserve will depend principally on the nature of the ground. The object is to maintain the power of replenishing the supply from the brigade reserve, whilst getting the battalion reserve as far forward as possible, so as to facilitate the supply of the forward troops.

The responsibility for communication being from rear to front in ammunition supply, it is the duty of the officer in charge of the brigade S.A.A. reserve to send orderlies forward to remain with the battalion S.A.A. reserves. As the battalion ammunition vehicles become empty, they will be refilled or exchanged from the brigade reserve under the direction of the N.C.O.

48. Other administrative arrangements

1. *General*.—Other administrative arrangements necessary on a battalion going into battle may include the following:—

- i. Ration and water arrangements.
- ii. Medical arrangements.
- iii. Police arrangements.
- iv. Disposal of greatcoats and blankets.

2. *Rations*.—The system for the provision of rations and forage in the field is described in Field Service Regulations, Vol. I. Normally the staff captain at brigade headquarters will notify the quarter-masters of units direct with regard to the "meeting point" and the time at which unit's guides should arrive. Here the lorries of the R.A.S.C. will be met by battalion guides under arrangements to be made by the quarter-masters; these guides will lead the lorries to units transport lines.

Here the supplies will be divided among companies and taken over by the C.Q.M.Ss., who will deliver to their companies. The method of distribution inside the battalion will depend on circumstances; if possible, the cooks* will be moved up close behind companies and hot food carried direct to platoons from the cooks; on other occasions meat will be cooked at the transport lines and issued cold to platoons after dark; sometimes preserved rations will be issued. In each case a rendezvous will be fixed and notified to company commanders, who will send back platoon representatives as a carrying party. The C.Q.M.S. will report to his company commander when rations have been issued to platoons, and later will return to the transport lines.

3. *Water*.†—Instructions with regard to watering arrangements generally are contained in Field Service Regulations, Vol. I, 1930, Sec. 153, and the Manual of Hygiene and Sanitation, 1934, Chapter IV. Before going into action, care must be taken to ensure that all men's water bottles are full. There are in the battalion two water carts (capacity 118 gallons each) in which the water is automatically purified, from which bottles should be filled; if for any reason these are not available, the water should first be passed as fit for drinking by the medical officer. Impure water can often be made fit for drinking by boiling or the addition of chemicals. Strict water discipline must be preserved, and drinking without permission should be forbidden.

* In mechanized units cooking sets are now provided.

† In mechanized units water carts are replaced by water trucks: capacity 230 gallons.

4. *Medical arrangements.*—The system of the evacuation of casualties is described in Field Service Regulations, Vol. I, 1930. The unit medical officer will be informed early of the plan of the commander and the site selected for the regimental aid post (R.A.P.), which information will also be given to company commanders. He will also be given orders regarding the allotment of stretcher bearers to companies.

Of the stretcher bearers on the establishment of a battalion a normal allotment would be two to each company, but this must be increased if the company is likely to be very much dispersed. The remaining bearers will be kept as a reserve under the medical officer, to be sent to companies as required. After an advance arrangements must be made as early as possible for a systematic search by stretcher bearers of the ground covered, to ensure the collection of all wounded men.

On casualties occurring, the man's individual field dressing will first be used; until men can be evacuated to the regimental aid post, they will be collected in groups under cover under company arrangements.

No slightly wounded man will go back without the permission of his platoon commander. No man, other than a stretcher bearer, will accompany a wounded man to the rear unless especially ordered to do so; full use, however, should be made of prisoners for carrying back wounded men. Before a wounded man is sent back, his ammunition should be distributed amongst other men still fit to fight.

5. *Police arrangements.*—The regimental police will receive their instructions from the R.S.M. and will be employed on the following duties:—traffic control, ensuring that men move under cover in the neighbourhood of headquarters.

6. *Greatcoats and blankets.*—Greatcoats are carried in the first-line transport of units.

Blankets are carried in bulk in a section of the second-line transport.

CHAPTER IX

PATROLS

(To be read in conjunction with Field Service Regulations, Vol. II, 1935, Sec. 33)

49. General remarks

1. *Protection.*—Security will depend largely on the receipt of timely warning of the enemy's location and action; this warning will be obtained through air reconnaissance, the action of mobile troops and by other means; it will also be provided by infantry detachments with or without the support of other arms. Infantry patrols will be employed both for reconnaissance and for special duties when a small fighting group is required. The different kinds of infantry patrols and their duties are described in the following paragraphs.

2. *Reconnoitring patrols.*—The object of a reconnoitring patrol (see Field Service Regulations, Vol. II, 1935, Sec. 33, 2) may be either reconnaissance for the purpose of protection or special reconnaissance for information with regard to the enemy or the ground. Between special reconnaissance for information and reconnaissance for protection only there is this difference: in the former case the action of the patrol does not depend on that of the unit from which it is sent out, and it has no protective responsibilities, while in the latter case its movements and action depend on the plans and movements of the body which it is protecting.

Reconnoitring patrols on protective duties are sent out to give warning of the presence of the enemy and to secure the force against surprise. Instances of such patrols are those detailed to watch a flank during movement or patrols sent out from the outposts before dawn to discover if the enemy has worked close up to the position during the night. The action of such patrols is dependent on the plans and movements of the main body.

Reconnoitring patrols for special duties are employed on tasks such as to maintain contact with the enemy after an attack, to ascertain his position or to reconnoitre lines of advance. They may also be employed on liaison duties to discover the position of and maintain touch with flanking

units, or by troops in reserve to ascertain the position of troops in front.

In the case of special reconnoitring patrols, it will usually be possible for the patrol leader to carry out his task to some extent in his own time, and on ground of his own choosing.

3. *Fighting patrols*.—No hard and fast line can be drawn between the duties of reconnoitring and fighting patrols. As in the case of reconnoitring patrols the task of a fighting patrol may be protective or for some special purpose. Examples of the former type are patrols to delay the enemy during a withdrawal, to counter enemy patrols, to act as covering parties in defence, or to protect troops forming up for a night attack. Examples of the latter type are patrols sent out to secure identifications, to harass the enemy or as a demolition party.

The fighting patrol may also be employed to form a base from which reconnoitring patrols may operate (*see* Field Service Regulations, Vol. II, 1935, Sec. 33, 3).

In certain circumstances, more particularly in withdrawals and flank guard operations, fighting patrols, provided with mechanical transport, may be employed to carry out duties normally falling on the mobile troops. In such cases a number of fighting patrols may be provided, each based on a mechanical vehicle in which the patrol can withdraw rapidly should occasion arise. Machine guns and anti-tank guns may be attached to these patrols.

50. Preparatory arrangements

1. *Strength and composition of patrols*.—The strength and composition of a patrol will depend on its task. A patrol sent out to gain information should avoid unnecessary clashes with the enemy and should only fight to the extent to which fighting is necessary in order to ensure getting and transmitting the information required.

A reconnoitring patrol should therefore be as small as possible. Two or three men, if they are competent scouts, will often be sufficient, although it may be necessary to increase the number for protection, or, if the patrol is out for a long period, because of the fatigue of watching. Reconnoitring patrols will, however, seldom exceed a section in strength.

As a fighting patrol, on the other hand, in order to carry out its task, must often be capable of manœuvre supported by fire, it will as a rule consist of two or more sections and be commanded by an officer. It should be strong enough to deal with patrols likely to be encountered, to capture prisoners and to bring back its own wounded. The men should be

fresh and, if possible, should have had an opportunity of studying the ground over which they are to operate. For these reasons fighting patrols will often be found from the battalion reserve, or from the reserves of forward companies.

In the organization of all patrols consideration should be given to the means of transmitting rapidly any information that has been gained. Signals may sometimes be arranged, and bicycles, if available, will often be of value for sending back reports.

2. *Equipment*.—The clothing, equipment, including anti-gas equipment, and arms carried by a patrol will depend on the task in hand, the nature of the country and the length of time they are expected to be out. Mobility will often be of the greatest importance and equipment should therefore be as light as possible and may on occasion consist only of a rifle with a few rounds carried in the pocket. It will often be advisable to dispense with light machine guns, particularly if the patrol is operating in woods or very close country. Nothing bright should be worn or carried and equipment should be tested to see that it does not rattle. Particularly when operating at night, silence is vital.

3. *Orders to the patrol*.—The success of a patrol depends principally on the leader. It is essential that he should be given clear and definite orders. He should be told:—

i. What is known of the enemy's dispositions and of the location and movements of friendly troops in the neighbourhood.

ii. His task and any points on which he is required to bring back information. Definite questions will produce definite answers.

iii. The approximate route which he is to follow, how far he is to go and how long he is to be out.

iv. Whether bodies of friendly troops in the vicinity, including the artillery, have been told that the patrol is going out, its route and time of return.

v. How his patrol is to be recognized on its return (password, etc.).

4. *Reconnaissance*.—The leader should study the ground and his map, and make a plan for carrying out his task. He should note particularly likely observation posts, covered routes, landmarks, suitable bounds, obstacles and places where he might be ambushed.

5. *Plan and orders*.—In making his plan, the patrol commander will bear in mind the importance of outwitting the enemy. All men in the patrol should know the intention of

the commander, the plan of action and the formation to be adopted. As many members of the patrol as possible should be enabled to view the country over which the patrol is to operate.

51. Conduct of a reconnoitring patrol

1. *General.*—The action of a reconnoitring patrol will depend to some extent on whether it has protective duties or whether its object is to gain some special information. In the former case it must keep touch with the body from which it is sent out and its movements will depend on the action of that body. In the latter case there are no such restrictions as to movement and the leader has often greater latitude both with regard to ground and time; it must be remembered, however, that to gain the information is in itself valueless unless that information is transmitted to the commander who ordered the patrol, in time for him to act on it.

2. *Route.*—The route will often be decided by the officer who sends out the patrol. Even so, the patrol leader must study it carefully, in order to make the best use of the available cover and of places along the route from which observation can be obtained. The route should be altered on the way back; it is always possible that the patrol may have been seen and an attempt made to cut it off on the way home.

No patrol should follow the same route or exactly the same procedure two days running. This will quickly be noticed by the enemy and must sooner or later lead to disaster. The enemy must never be certain what a patrol is going to do.

3. *Approaching an objective.*—The patrol leader should decide early how he is going to approach his objective. He should try never to do what the enemy is likely to expect. For this reason it is often better to approach an objective from a flank, and, if possible, to avoid obvious places, such as isolated pieces of cover and prominent hills.

Information can often be gained more effectively by getting to a suitable observation post, and keeping the objective under close observation, than by frequent movement.

Unless the objective and the intervening ground can be seen during the whole course of the patrol, the advance should be by bounds as in the case of movement by scouts (see Infantry Section Leading, 1934, Sec. 38). As each bound is reached, the patrol leader will select the next bound and the line of advance to it.

4. *Formations.*—The formation adopted will depend on concealment, control, protection and ground. The patrol

will be kept as compact as possible, as the more it is dispersed the more difficult it is to control. At the same time the necessity for guarding against surprise from all sides may result in daylight in the men of the patrol being more widely dispersed than is normal on other occasions. The extent of this dispersion will often depend on the ground.

The formation adopted must provide for observation not only to the front but also in the flanks, and one man should be detailed to follow at a safe distance in the rear, whose particular duty it will be to get back with a message should the patrol be surprised. The patrol will often be preceded by scouts.

5. *Withdrawing the patrol.*—The withdrawal will normally be made by bounds. Before making a fresh bound, the patrol leader will select a suitable fire position in the rear; a portion of the patrol will be sent back to this position by the most rapid route covered, if necessary, by the fire of the remainder. On reaching its position, it will be prepared to cover the withdrawal of the rest of the patrol. The positions selected as bounds should give a good field of fire to the front and should have a covered line of withdrawal. On approaching its own lines, the patrol will be covered by other troops; the line of withdrawal should be selected so as not to mask their fire.

6. *Conduct of a reconnoitring patrol by night.*—The principles for the conduct of a patrol by day are generally applicable by night, with the following modifications. On dark nights it will usually be better not to attempt to move by bounds, but at a steady pace with frequent short halts to listen, to check direction and to ensure that the patrol is keeping closed up.

The pace will be slow in this type of movement. A suitable formation is two riflemen and the patrol leader just far enough ahead to be visible by the remainder. Patrol leaders must use their common sense and modify formation to suit the degree of darkness.

Silence is even more necessary by night than by day, and the ears are more useful than the eyes.

The same rule, as regards the avoidance of clashes with the enemy, applies as by day. If, however, a surprise collision takes place with the enemy, bold action is the most effective, and the patrol relying on surprise should attack with the butt or bayonet before the enemy has had time to collect his wits.

The following points should be remembered during movement at night.

- i. The value of low ground both for observation and concealment.
- ii. The avoidance of skylines.
- iii. The importance of silence—equipment, if worn, should be tested to ensure that it does not rattle, soft ground should be selected for movement, etc.

52. Conduct of a fighting patrol

1. *General*.—By reason of their tasks (see Sec. 49, 3), fighting patrols will be stronger and must be prepared to act offensively or defensively.

2. *Formation*.—All patrol formations should provide for protection to the front and flanks. The details of the formation will depend on the nature of the country and the proximity of the enemy. A patrol, moving along a road, not in touch with the enemy, may remain on the road with a section thrown out in front; flank protection may be provided either by scouts moving on the flank of the patrol or observers moving with the patrol.

When in close contact with the enemy, a more open formation must be adopted. The principles to be aimed at are protection, control and power of manœuvre; the requirements are to some extent conflicting. To ensure protection, some dispersal is necessary and a forward section will generally be required with either sections or scouts thrown out on either flank; to facilitate control, the patrol should be as concentrated as possible; to retain power of manœuvre, the dispositions should be such that, when the enemy is encountered, the minimum numbers can be pinned to their ground or surprised by the enemy's fire.

The position of the patrol commander will be where he can best command the whole of his patrol; this may be at the head of the main body of his patrol, or with the leading section or in a central position.

The distance between sections will vary with the ground, and should, if possible, be sufficient to ensure that the main body of the patrol will not come unexpectedly under enemy small arms fire. When this cannot be achieved without undue dispersion, the rearward sections must protect themselves by adopting suitable formations.

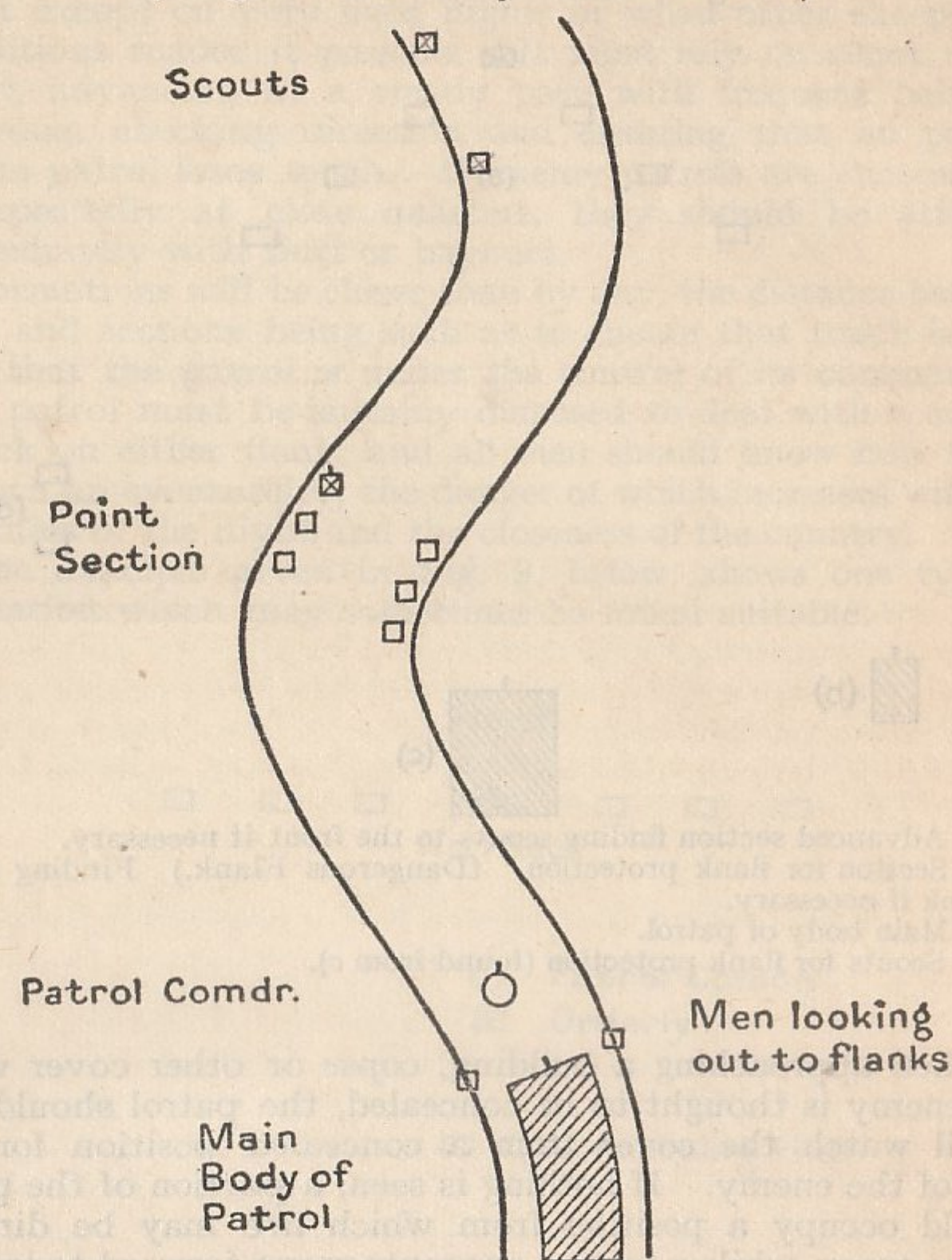
Figs. 7 and 8 (pages 77 and 78) are given to illustrate the above principles. They are not drawn to scale and are only examples which may be suitable on certain occasions.

3. *A patrol advancing*.—When the enemy may be encountered, the patrol should advance by bounds from feature

FIG. 7

PATROL MOVING ALONG ROAD NOT IN CONTACT WITH ENEMY.

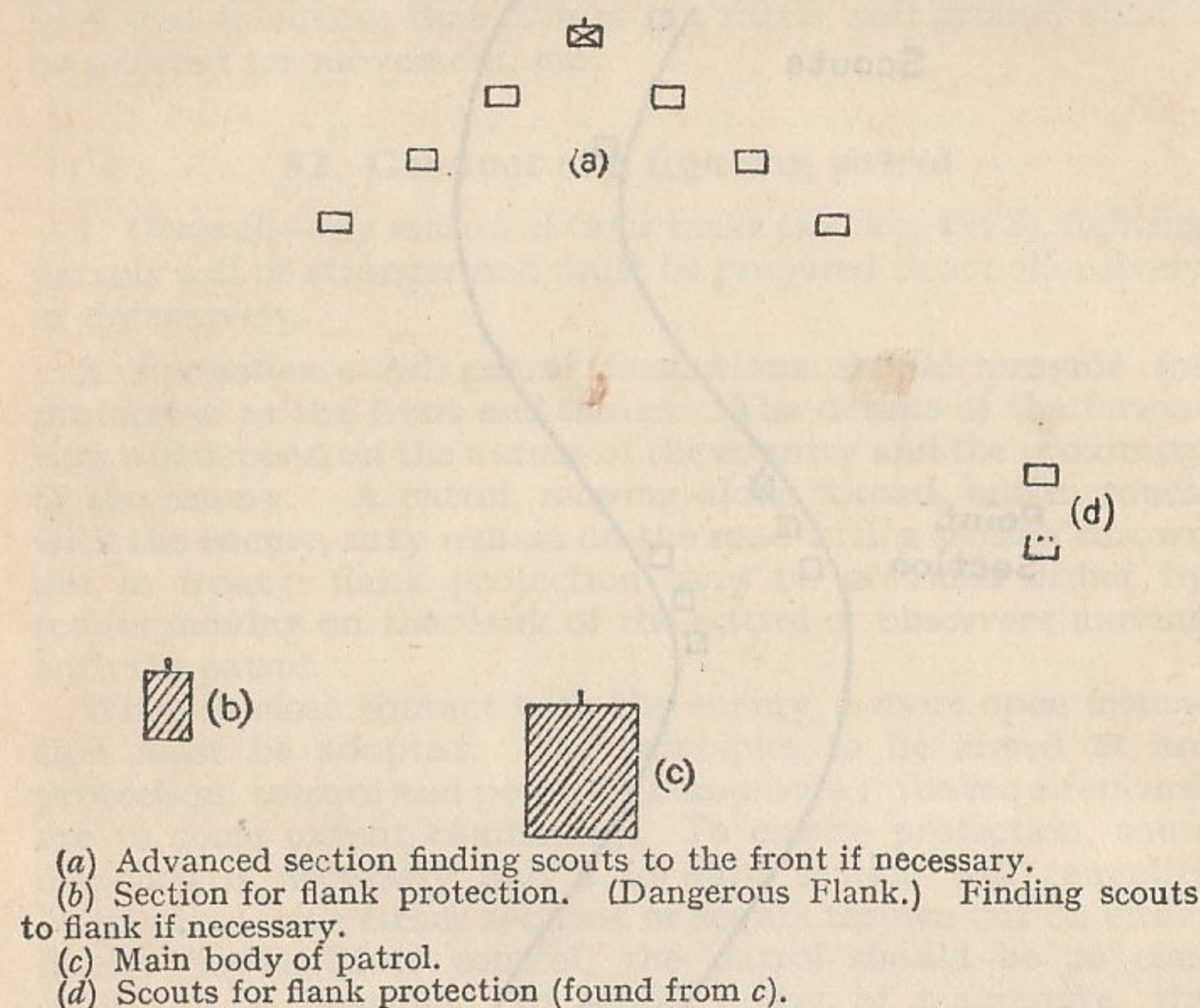
(Diagrammatic only. Not to scale.)



to feature. As each bound is reached by the leading section, it is made good by the main body of the patrol and is the basis from which the next bound is made. From the last established bound the advance of the leading section can be watched and given protection should it get into difficulties. Bounds should be selected according to the field of view and facilities for movement to the flank under cover. When the enemy is encountered, the patrol commander will thus be able to make his plan, and often to deal with him from a flank covered by the fire of his leading section.

FIG. 8

PATROL MOVING ACROSS COUNTRY. ENEMY IN CLOSE CONTACT.
(Diagrammatic only. Not to scale.)



When approaching a building, copse or other cover where the enemy is thought to be concealed, the patrol should first of all watch the cover from a concealed position for any sign of the enemy. If nothing is seen, a portion of the patrol should occupy a position from which fire may be directed on the cover, while a section or scouts move forward to investigate making the best use of any covered approaches available. Similar action should be taken in approaching a bridge or ford.

4. *A patrol withdrawing.*—During the withdrawal of a patrol, a similar process will be adopted and bounds will be selected in rear, the main body of the patrol remaining on each position until one or more sections are established on the next position from which they can cover the withdrawal with their fire.

5. *A fighting patrol at night.*—The method of conducting a fighting patrol at night and the best formation to adopt depend on a number of factors, among which are included the

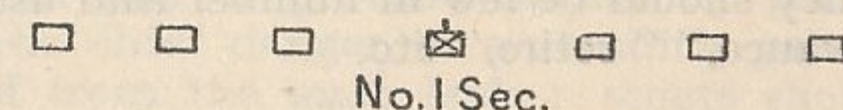
task of the patrol (see Sec. 49, 3), the distance from the enemy, the darkness of the night, and the nature of the ground.

A fighting patrol by night will not normally be able to carry out manoeuvre involving the co-operation of fire and movement except on very light nights or when other exceptional conditions render it possible. It must rely on silent movement, advancing at a steady pace with frequent halts for listening, checking direction and ensuring that no portion of the patrol loses touch. If enemy patrols are encountered unexpectedly at close quarters, they should be attacked immediately with butt or bayonet.

Formations will be closer than by day, the distance between men and sections being such as to ensure that touch is kept and that the patrol is under the control of its commanders. The patrol must be suitably disposed to deal with a sudden attack on either flank, and all men should know how to act in such an eventuality, the danger of which increases with the darkness of the night and the closeness of the country.

The example given in Fig. 9, below, shows one type of formation which may sometimes be found suitable.

FIG. 9



○ Patrol Comdn.
□ Orderly

□ □ Connecting File

⊕ Serjeant

□ □ No. 2 Sec.

⊕
□ □ No. 3 Sec.

This formation gives the patrol commander an opportunity of working round an enemy patrol which has been spotted by his leading section, which should be with intervals of from three to ten paces between men, the darker the night the smaller being the intervals. The rear sections might be up to 30 paces in rear, with the necessary connecting files between them and the screen.

On other occasions (*e.g.*, when on account of the darkness of the night or the close nature of the country manœuvre would be impossible without danger of friendly sections fighting each other) a formation with less depth may be desirable, which will enable the shock action of the patrol to be increased or give it greater flank protection.

The formation adopted on any occasion must therefore depend on the conditions obtaining at the time.

Movement should be by bounds of approximately 30 paces; at each bound a halt should be made to listen and to ensure that men are closed up.

A patrol by day can be controlled by signals and word of mouth, but by night the signals cannot be seen and talking or even whispering may betray the patrol to the enemy. Control signals should therefore be arranged as unlike human sounds as possible (*e.g.*, two pieces of sandpaper scraped together); they should be few in number and used to signify "halt," "advance," "retire," etc.

53. Organization and conduct of a standing patrol

1. Standing patrols are sent out to watch an approach by which the enemy is expected to move. They are usually sent out to watch such places as fords, bridges and road junctions or likely enemy assembly positions which are hidden from the main body. They may also occupy prominent points which the enemy must capture as a preliminary to an attack or from which a good view can be obtained.

The difference between a standing patrol and a defensive post is that the latter must fight in its position to the last unless otherwise ordered, whilst a standing patrol may change its position or withdraw if forced to do so by the enemy; in his subsequent action the leader of a standing patrol should bear in mind the task allotted to him.

2. The strength of a standing patrol will depend on how long it is to be out, the resistance which it is expected to offer, the interference likely from the enemy and the difficulties of protecting itself in its position and when withdrawing. If resistance is expected of it, it should be strong in fire-power

and equipped with light machine guns; anti-tank rifles may also be given to the patrol if a tank defile is being watched.

3. The patrol commander must know, before he sets out, the extent of the resistance which he is expected to offer. His task may be to hold on until a specified time, or to withdraw only when approached by the enemy in superior numbers, or as soon as the enemy has been seen.

4. Before setting out, the patrol commander should know:—

- i. The points which he is to watch or hold.
- ii. His route out and back.
- iii. What he is to do when the enemy appears.
- iv. How often to report and by what means.
- v. Any signals that he is to give on seeing the enemy or when about to withdraw.
- vi. How he is to be recognized on approaching his own line.

5. As the patrol is operating alone, it will be entirely responsible for its own protection. All round protection is therefore of importance and the position should be selected with a view to the absence of covered approaches from the flanks. A good line of withdrawal is also of importance, and a long field of fire to prevent the enemy getting to close quarters. The chief danger to a standing patrol is that of being cut off from the main body; scouts should therefore be posted to watch the flanks.

CHAPTER X

PROTECTION

(See also *Field Service Regulations, Vol. II, 1935, Chapter V*)

54. General principles

1. *Definition.*—By protection is meant the measures which a commander takes to safeguard his command against being surprised by the enemy, and to conceal his dispositions from the enemy; it includes precautions against observation and attack from the air and against the risk of gas attack.

2. *Responsibility of commanders.*—The commander of every unit and sub-unit is responsible at all times for its protection; no body of troops can be regarded as secure unless protection is furnished in all directions from which attack is possible, whether from the front, the flanks, the rear or the air. Under modern conditions, even when a considerable distance from the enemy and when other troops are in front or to the flanks, units are liable to attack and should, therefore, invariably be ready to fight or protect themselves at short notice in any direction.

3. *Means of protection.*—Adequate and timely information is one of the surest means of protection; for, if the enemy's dispositions are known and his movements watched, he will have little opportunity of effecting surprise. The infantry commander obtains his information from other arms and by means of patrols (see Chapter IX), sentries and intelligence posts. A force dispatched on a special reconnoitring mission cannot be relied on for other protective duties.

Since information cannot be guaranteed to be entirely complete or up to date, protective detachments, which will protect by resistance, while the troops being protected are getting ready for action, are also required. The action of these detachments must be regulated solely in the interests of the body which they are protecting.

4. *Protective detachments.*—Protective detachments are thrown out in every direction from which enemy attack is possible. Their duties are:—

- i. To secure at the earliest possible moment information of the nature of any hostile movement within the limits of their responsibility.

- ii. To prevent enemy reconnoitring troops from obtaining information.

- iii. By resistance to gain time to enable the commander to prepare for action.

The strength, composition and disposition of protective detachments depends on the proximity, strength and characteristics of the enemy, the size of the force to be protected, the disposition of neighbouring friendly troops, the nature of the country and its inhabitants and whether the duty of protection is to be carried out in clear weather, fog or darkness. Like all other detachments, they should be no larger than is necessary for the proper performance of their task.

5. *Termination of responsibility.*—A protective detachment should continue to carry out that role until relieved or given other orders. Thus, at the end of a march the troops which have covered the march remain responsible for protection when the force halts, until other arrangements have been made. Similarly, when the march begins again, outposts will not be withdrawn until the troops detailed for protection on the march are in position.

6. *Intercommunication.*—In the absence of special orders, protective troops are responsible for maintaining connection with the force protected.

7. *Nomenclature.*—Detachments for protection on the move are usually referred to as advanced, flank or rear guards, and detachments for protection at rest as outposts.

8. *Infantry action.*—When protective detachments become engaged with the enemy, they act in accordance with the ordinary principles of attack and defence. Since they are normally responsible for a wide front in proportion to their strength and since they have usually to fight for a limited time only without support, their dispositions are not usually made in the same depth as is required for a decisive attack or for protracted defence.

55. Protection against aircraft

(See also *Small Arms Training*)

1. *Means of protection.*—The principles of protection against aircraft are contained in *Field Service Regulations, Vol. II, 1934, Sec. 38*. The means available for the infantry for protection in the open are:—

- i. Concealment.
- ii. The adoption of suitable formations.
- iii. Small arms fire.

2. *Concealment.*—The position of troops may be given away to an air observer by the use of regular formations, by movement, dust, smoke and similar means. When under observation which it is important to avoid, troops should halt, in shadows if possible, refrain from looking upward, stop the engines of mechanical vehicles to prevent exhaust smoke, try to conceal the smoke of cookers and cover up all polished surfaces.

Shadows provide an effective form of concealment, and the shadows cast by buildings, cuttings, embankments, walls, hedges, trees, etc., may be used. The value of woods to give cover cannot be decided from the map; it varies considerably according to the nature of the trees and the time of the year; more can be seen by an observer vertically above a wood than would be supposed from the ground.

In close country quick deployment off the road and movement across country may be impossible. In such cases orders to troops to march on both sides of the road may assist concealment and make it difficult for hostile aircraft to locate the column; the free passage of traffic, however, should not be hindered.

3. *Formations.*—If troops are in the open, the observer will be hampered by the adoption of irregular and dispersed formations; when there is danger of attack and the ground admits, field formations (*see* Sec. 27) will therefore be adopted; these formations will also present a less vulnerable target for air attack.

SMALL ARMS FIRE

4. *Warnings.*—The efficiency of the defence will depend firstly on the speed at which warning of attack can be conveyed to subordinate commanders; secondly on the quickness with which warning can be followed by executive orders for movement or fire; and lastly on the skill, steadiness and fire discipline of the troops.

It should be realized that, in certain types of attack and under conditions favourable to attacking aircraft, there will often be not more than a few seconds' warning, even with quick, well-trained air sentries. With well-trained and disciplined troops even a few seconds will be valuable. The number of air sentries to be detailed must depend on circumstances, but should not be less than two for each company. The direction and area in which each sentry is to watch must be carefully regulated. They must be continually searching the sky, especially in the direction of the sun, towards low hills, woods, etc.; they must also listen for the approach of aircraft.

At the halt, if time allows, they should be posted on high ground, so as to get a clear view over an adequate horizon. It is essential that an air sentry should not allow his attention to be distracted by events other than the approach of aircraft; since the duties will be exhausting and will entail great strain on the eyes, arrangements should be made for constant reliefs.

Details of warning signals are given in Sec. 32.

5. *Protection on the move.*—On the move, the rifle will normally be used, but light machine guns should be brought into action if time permits. The few rounds that can be fired in time, the difficulty of hitting the target and its small vital area make it advisable that as great a volume of fire as possible should be employed. Normally, therefore, all available rifles will be fired.

Since there will not be time to issue orders for opening fire through the normal chain of command, responsibility must be delegated. The normal fire unit will be the platoon. Men will march with magazines charged with ten rounds, sights set at 500 yards.

6. *Protection by piqueting.*—When it is important that movement should not be checked, where hostile aircraft are active in making low-flying attacks or when faced with the passage of a defile, it may be necessary to arrange for continuous protection by piqueting certain portions of the route by detachments with light machine guns. The remainder will continue the march when attacked, adopting such open formations as the nature of the country will allow.

In such cases a commander should be detailed to be responsible for the general plan of defence, the posting of piquets in advance of the column and for their collection afterwards. If the tactical situation admits, the light machine guns of companies which are provided with tripods convertible for anti-aircraft action may be centralized under his control. When the column has passed, guns may be moved forward again to the head of the column, provided that the battalion is equipped with mechanized transport vehicles.

Light machine guns used for piqueting will be disposed in accordance with the principles for protection at the halt (*see* para. 7, below).

7. *Protection at the halt.*—When halted, the fire of light machine guns is the most economical form of protection. It should be organized in the form of area defence, the guns being sited not less than 500 yards or more than 800 yards apart at the corners of a series of equilateral triangles, disposed so as to cover the area to be protected.

When troops are concealed, orders must be issued whether light machine guns are to be posted and are to open fire against hostile aircraft or not; the opening of fire may give away to the hostile observer the fact that the area is occupied.

During short halts, anti-aircraft light machine guns will be disposed under arrangements made by company commanders. During long halts or in camps, billets or bivouacs, the anti-aircraft defence will be co-ordinated under battalion or brigade arrangements.

56. Protection against armoured fighting vehicles

1. *Means of protection.*—The means of protection against armoured fighting vehicles are described in Sec. 79 and the application of these means in the attack is dealt with in Sec. 70.

The radius of action of armoured fighting vehicles raises special problems of protection particularly affecting a force on the move. Advanced and rear guards should be given a sufficient allotment of anti-tank weapons to make them capable of dealing with attacks by armoured fighting vehicles. Even when no immediate threat against a flank exists, actions by small numbers of armoured fighting vehicles or troops in mechanical vehicles may be expected. In such a situation the most economical form of protection may be to establish piquets covering the approaches on the threatened flank or flanks.

Piquets, for which troops will be specially detailed, will normally be put into position by the advanced guard and withdrawn by the rear guard.

2. *Road blocks.*—Instructions for the siting and construction of road blocks are contained in the Manual of Field Engineering (All Arms), Vol. I, 1933, Sec. 22. The fullest use should be made of obstacles, the protection of buildings and anti-tank mines, to economize the limited number of anti-tank weapons available, the mobility of which should be exploited to meet the attack where it actually develops. Like any other obstacle, a road block should be covered by the small arms fire of the defence, supplemented where necessary by anti-tank rifles. The obstacle produces its maximum effect when encountered unexpectedly by the enemy at a place where a deviation is difficult, and it is important that the obstacle should be under the effective fire of the riflemen, some of whom should be in defiladed positions, particularly if there are no anti-tank weapons. Road blocks organized where friendly vehicles may require to pass should be easily removable and at some distance ahead there should be a warning (lamp at night) to prevent them running into the obstacle.

57. Protection against gas

(To be read in conjunction with Defence Against Gas)

1. *Means of protection.*—The means of protection against gas depend on the training and discipline of all ranks and on good organization by commanders of all precautionary measures and means available to protect groups of men, animals, equipment, stores and food.

Details of gas alarms and the equipment available for gas defence (respirator, eye shields, ointment, anti-gas clothing, bleaching powder, etc.) and their uses will be found in the Manual of Defence against Gas.

2. *Training and discipline.*—A high standard of individual training is essential to ensure that equipment is used correctly and in good time; good gas discipline, based on confidence in the equipment and skill in its use, is essential if casualties are to be prevented and the danger of panic lessened. All ranks should know the types and characteristics of war gases, and be able to recognize them and to carry out normal work while wearing a respirator for a period of at least two consecutive hours.

3. *Precautionary measures.*—A good system of alarm signals to warn troops that gas is being used by the enemy is essential. Gas alarms are of two types:—

- i. *Sound alarms* will take two forms:—
 - (a) Hand operated alarms, such as horns and rattles, for issue to all units and formation headquarters and for use with mechanical transport.
 - (b) Power operated alarms for use in back areas and installations at the base and on the L. of C.
- ii. *Silent alarms* consist of—detectors, gas spray; detectors, gas, ground and signs, warning, gas; these will be issued on a wide basis to all headquarters, units and establishments. Such alarms will be used to indicate gas-spray attack, to detect liquid blister gas in contaminated areas and to mark those areas.

The efficiency of the above forms of alarms will depend on the provision of sentries to work them and on the knowledge and alertness of those sentries; a sentry will be posted with each sound alarm and with each group of detectors, gas spray. Whenever possible, to economize personnel, the duties of gas sentries should be performed by those responsible for tactical protection. The action to be taken on the alarm of gas being

given must be laid down in standing orders and thoroughly understood by all ranks.

4. *Routine of protection.*—The following measures of protection will minimize the risk of casualties from gas attack:—

i. Personnel who are exposed to the risk of gas attack will wear their respirators so that they can be adjusted instantly on the first indication of gas attack; delay may be fatal.

ii. Precautions must not be relaxed after a gas attack of any nature, as the attack may be repeated at once in the same or in a different form.

iii. Protection against air spray attack on the march and in the open will be provided by anti-gas equipment, and by utilizing, whenever the tactical situation permits, the cover of walls, banks, hedges, etc. Troops at rest or in reserve, when there is a danger of air spray attack, will be kept, as far as possible, under cover in billets or camps, or will bivouac in thick woods, which give a measure of immediate protection against gas spray. It may be necessary to evacuate wooded areas, however, after a gas attack owing to the tendency for gas to persist in such surroundings.

iv. Areas heavily contaminated by blister gas should be cleared of troops as far as the tactical situation permits; if casualties are to be reduced, arrangements will be necessary to supply clean clothing and equipment to troops which have been exposed to air spray attack or have passed through a contaminated area.

v. Since air spray or other gas attacks may be made at night, troops should sleep under cover as far as possible; sentries should be so posted that troops can be awakened in time to allow adjustment of their respirators and other anti-gas equipment.

vi. Animals should, as far as possible, be kept under cover in stables or in the shelter of trees; measures must be taken to prevent them grazing on ground contaminated by blister gas.

vii. Supplies of food and water for men and animals can be contaminated by gas and will cause casualties if consumed; they should, whenever practicable, be protected by tarpaulin or other covers; supplies which have become contaminated should be destroyed. Food in sealed metal containers is unlikely to be contaminated and may be eaten, unless there are signs of gas when the container is opened. Water from areas contaminated by blister gas must not be used for

drinking or for ablution; boiling does not necessarily purify water so contaminated.

viii. During a gas attack, weapons, ammunition and instruments should be kept covered when not in use.

ix. When the enemy has used blister gas in shell, bombs or by direct application, the areas contaminated should be reconnoitred and marked as soon as possible. The area covered by gas spray may be so great that reconnaissance will often have to be confined to determining when the spray has dried.

5. *Decontamination.*—All ranks must know the methods of using the equipment provided to decontaminate weapons, instruments, vehicles, etc., and of sealing or removing blister gas from an area where frequent passage is necessary, e.g. a headquarters or dressing station. Contaminated clothing and equipment will be collected and removed under special arrangements, since its cleaning is a technical process involving a considerable plant.

58. Protection when advancing

1. *Advanced guards.*—Every body of troops advancing towards the enemy will be covered by advanced guards. The tasks of the advanced guard are as follows:—

i. *To gain information of the enemy.*—This reconnaissance will generally entail offensive action to force the enemy to disclose his strength and the position of the main body. Reconnaissance to locate the enemy's flanks will be of special importance.

ii. *To prevent the enemy reconnoitring troops from gaining information.*—This will involve driving back the enemy's advanced detachments.

iii. *To prevent the main body being delayed,* by brushing aside minor resistance.

iv. *If the enemy is met in force, to give the main body time to deploy.*—To do this, the ground necessary to protect the deployment should be seized and also the observation posts necessary for the preparation and execution of further operations.

2. *Composition.*—The advanced guard will usually be a force of all arms (Field Service Regulations, Vol. II, 1935, Sec. 41, 1). The main body of an advanced guard is called the main guard; from it is pushed forward a protective detachment called the vanguard, which in turn throws forward an advanced point and any other protective patrols necessary. Beyond the vanguard again may be the mobile

troops, which will normally be moving a considerable distance ahead of the vanguard and cannot relieve it from the responsibility of local protection. (Field Service Regulations, Vol. II, 1935, Sec. 42.)

THE VANGUARD

3. *Composition of the vanguard.*—An advanced guard commander will detail a suitable vanguard, the duties of which will be to afford protection to the main guard and to supplement the advanced guard mobile troops in obtaining information. In the case of a battalion acting as advanced guard to a brigade, the vanguard will often consist of one company.

While quick support should be available at short notice for the vanguard company by means of mortars, machine guns and anti-tank weapons, the mobility of these when mechanically transported may preclude the necessity of their actually marching with the vanguard or being under the orders of the vanguard commander, provided that they are readily available.

Only such transport as is required for fighting will accompany the vanguard; the remainder of the first-line transport will move in rear of the main guard.

4. *Action of the vanguard.*—A vanguard commander may be given instructions regarding the distance ahead of the main body he is to operate, the successive tactical features to be gained before halts are made, and his action on encountering the enemy, or he may be given a general protective role. In the latter case he will decide these details himself and will bear in mind the route ordered for the advanced guard and that his task is to protect the main guard against surprise and to support the mobile troops should they encounter opposition which they are unable to overcome.

A vanguard will move in sufficient depth to ensure its own local protection. Vanguard headquarters will normally move at the head of the main body of the vanguard.

The extent to which reconnaissance will be carried out by the vanguard will depend on the proximity of the enemy, the nature of the country and the reconnaissance carried out by mobile troops. The more reconnaissance that is necessary, the slower will be the rate of advance.

In open country where no opposition is anticipated the provision of a forward fighting patrol (the point) may be all that is necessary. In close country, on the other hand, if there is any possibility of enemy detachments being within striking distance, it will be necessary to search the country on either side of the line of advance; additional fighting

patrols will then be necessary and in some cases the vanguard may have to move fully deployed.

In attack a vanguard will act in accordance with the principles laid down in Sec. 62; the action on meeting a gas obstacle is described in paragraph 10, below.

THE MAIN GUARD

5. *Composition.*—A main guard comprises all the troops in the advanced guard other than the advanced guard mobile troops and the vanguard. It constitutes the reserve in the hands of the advanced guard commander available for employment according to the situation.

ACTION OF THE ADVANCED GUARD

6. *Orders to commander.*—The advanced guard commander, before taking over his duties, will be told :—

- i. What is known of the enemy.
- ii. The strength and composition of the advanced guard.
- iii. The intentions of the commander of the force which he is to cover, including directions as to the objectives to be gained during the advance.
- iv. The hour at which the main body will start, the route or routes which it will follow, and the probable duration of the march.
- v. The orders given to the mobile troops operating ahead of him and to other bodies of troops on his flanks.

7. *Advanced guard headquarters.*—The headquarters of an advanced guard commander will usually be at the head of the main guard, but he himself with his reconnaissance group (see Sec. 39), must often be forward to observe the situation and to get early information.

8. *Dispositions.*—An advanced guard should be in a position to protect the main body by the time the latter begins its march; the distance by which the advanced guard precedes the main body will depend on such circumstances as the nature of the country, the tactical situation and the intention of the commander of the force (see Field Service Regulations, Vol. II, 1935, Sec. 43, 1).

When the enemy is at a distance and the necessary reconnaissance is carried out by mobile troops and aircraft, the advanced guard will move along roads, taking such measures as are necessary for its local protection. Messages from the advanced guard mobile troops should be seen by the vanguard commander, and should be seen by him on their way through to the advanced guard commander.

An advanced guard commander will decide on the successive tactical features which are of importance, in order to protect the march, and will make his dispositions accordingly. The times at which an advanced guard halts are regulated by the tactical situation and by the features of the ground and do not necessarily synchronize with the hourly halts of the main body.

9. *Action on gaining contact.*—When it becomes obvious that strong enemy forces have been encountered, the advanced guard commander will be guided by his instructions and his knowledge of the intentions of the force commander; since the latter will require both information on which to base his plan and time and space to put it into execution, bold and vigorous action by an advanced guard is usually essential.

The action of the advanced guard in such circumstances is described in Sec. 62.

10. *Action on encountering a gas obstacle.*—Should the enemy be using gas, he may endeavour to delay the advance by contaminating with blister gas areas over which the advance must pass, such as defiles or cross roads. On reaching such an area, the leading sub-units should adjust respirators, send back a report, reconnoitre to find a way round the area, and leave one or more sentries to prevent other troops entering the contaminated area, and to point out its extent and the route taken by the leading troops. Commanders in rear will arrange for a more detailed reconnaissance to be carried out so that the necessary materials and tools may be sent forward to seal the gas or to prepare or improve an avoiding route. They will also arrange for the limits of the contaminated areas to be marked as soon as possible with warning signs, a supply of which is carried by all units.

If a way round the obstacle cannot be found without undue loss of time, and the area is not too large, a passage over the area may be provided by laying down material available, such as protective capes, assault bridging equipment, earth, corrugated iron, wood, etc. Men making this passage should wear protective equipment. If the gas on the road is already dry and time is of importance, respirators should be adjusted and the advance should be continued down the road.

Troops in mechanical vehicles may cross a contaminated area in safety if respirators are worn and the vehicles follow each other at such a distance that following vehicles are not splashed.

11. *Rear guard to a force advancing.*—An advancing force will detail a small protective detachment to cover the rear of the column. If there is little danger of attack, the main

duty of the rear guard will be to collect stragglers and to withdraw protective flank piquets and road blocking parties (See Field Service Regulations, Vol. II, 1935, Sec. 45.)

59. Flank protection

1. *General remarks.*—If there is a possibility of a column being attacked in flank, a flank guard will be detailed by the commander of the force, or two separate flank guards if both flanks are vulnerable. Flank guards are known as *right flank guard* or *left flank guard* according to the flank of the column which they protect.

The role of the flank guard is to prevent the enemy from interfering with the march of the main body; this will usually mean that it must endeavour to deny ground observation of the route along which the main body is moving. Like other protective detachments it has to reconnoitre and may have to fight in order to protect the main body.

2. *Action of a flank guard.*—In the case of small forces, a flank guard may often best carry out its task if it moves parallel to the force to be protected, by road if suitable routes exist, or across country if the ground is unenclosed. So long as there is no immediate danger of attack, the flank guard will move in a formed body with its own advanced flank and rear guards and reconnoitring detachments of mobile troops thrown out as may be necessary. Close touch should be kept with the progress of the main body. If there is a probability of enemy attack, the flank guard will have to occupy covering positions; its action will then be as in defence (Chapter XII).

With larger forces the flank guard will usually occupy some commanding feature on the flank or hold the crossings of some natural obstacle until the main body has passed.

Irrespective of the provision of flank guards, commanders should take steps for the protection of their commands from raids by armoured fighting vehicles (see Sec. 56, 2).

60. Protection when retiring

1. *General remarks.*—A force retiring covers itself against enemy pursuit by a rear guard. The duty of the rear guard is to secure for the main body an unmolested withdrawal and the time to put into execution any plans of which the withdrawal is a part. Since it will usually have to hold off the pressure of an enemy advancing in superior strength, a rear guard is a fighting force of all arms. The infantry allotted to a rear guard should be strong in machine guns, since long-

range fire power rather than numbers of men are required; it will facilitate the task of the rear guard if the infantry, or a part of it, can be given additional mobility by the use of mechanical transport.

The strength of a rear guard must depend on the circumstances, *e.g.* the closeness of the pursuit and the suitability of the ground for delaying action.

Troops forming a rear guard will be accompanied only by such transport as is essential for fighting purposes.

A rear guard is divided into rear guard mobile troops, rear party and main guard, corresponding with the mobile troops, van guard and main guard of an advanced guard; and its disposition on the line of march, when not pressed by the enemy, resembles that of an advanced guard turned about.

2. *Action when the pursuit is not close.*—When the hostile pursuit is not close, the responsibility for protection will fall mainly on aircraft and mobile troops, if available. This will allow the infantry to move in formed bodies on the roads, as information will be available in time to allow the infantry to deploy should the pursuit be pressed.

In the absence of mobile troops, their place may be taken by infantry provided with mechanical transport. In such cases a number of fighting patrols should be provided, each based on a mechanical vehicle in which the patrol can withdraw rapidly should occasion arise. Machine guns and anti-tank guns, when equipped with mechanical transport, may be attached to these patrols, which should also be supplied with means for rapid communication.

These patrols will normally be withdrawn on a timed programme from one tactical feature to another.

The composition of the dismounted portion of the rear guard is similar to that of an advanced guard, except that it should be particularly strong in anti-tank weapons. It will be divided into a main guard and a rear party for local protection, to collect stragglers and to ensure that the main guard has time to deploy. The main guard will normally move along the roads in column of route in the order which will enable it to come into action most readily; the unnecessary deployment of infantry must be avoided. If more than one road is used by the rear guard, each portion will find its own rear party, and liaison between the various portions of the rear guard must be arranged.

Should the enemy press the rear guard mobile troops so seriously that the latter are unable to delay the advance, it may be necessary to use the rear guard as a whole. This possibility must be foreseen, and, if the rear guard is to make the best use of ground, reconnaissance groups (*see* Sec. 39)

from the rear guard must be active throughout the withdrawal selecting suitable positions which can be occupied without loss of time.

ACTION WHEN IN CLOSE CONTACT WITH THE ENEMY

3. *Action generally.*—The task of a rear guard is to keep the enemy at a distance from the main body, and at the same time to be able to withdraw without becoming seriously involved, *i.e.* to compel the enemy to move as slowly as possible. The first requirement, as in any other operation of war, is good information, from air reports and reconnaissance by the mobile troops; the second requirement is the development of fire at long ranges by artillery and machine guns, to compel the enemy to deploy early; the third requirement is mobility, to facilitate a rapid withdrawal. A formation acting as a rear guard usually carries out its mission by taking up a succession of defensive positions, while the enemy is compelled to make dispositions for attacking or turning. Before the attack can fully develop, the rear guard withdraws, to repeat the same manoeuvre on the next favourable ground.

4. *Occupation of a rear guard position.*—In selecting and occupying rear guard positions it is important, firstly to show as strong a front as possible and secondly to make sure of good lines of retreat. A rear guard position does not require such depth as a position which is to be held for any length of time; the greater part of the force may be deployed in the forward defended localities from the outset, leaving only a proportionately small part in reserve.

So far as infantry units are concerned, the principles governing the occupation of the localities allotted to them will conform generally to those laid down for defence (Chapter XII). It is important to hold strongly those localities which command the main lines of approach, and to ensure that the various localities held can support each other by fire.

Concealment will be of the utmost importance. The possibility of the enemy making a bold use of tanks must be borne in mind, and the defensive localities selected should be chosen as far as possible with a view to minimizing this danger.

Unless sited to cover a defile, machine guns should be in direct fire positions, covering as wide an arc at as long a range as possible, alternative positions being selected; an easy and concealed line of withdrawal will be important, and vehicles should be kept as near the gun positions as is safe, so that the guns can be got away quickly. It will often be desirable for machine gun platoons to be placed under the command of rifle company commanders.

Provided that the nature of the ground affords concealment and good scope for the use of infantry weapons, any great depth in the defensive dispositions will not be necessary; it will, in fact, often have to be sacrificed owing to the relative weakness of the rear guard. Where, however, the situation demands the occupation of a rear guard position in close country, with the consequent sacrifice of fire power, greater strength and depth will be required in order to prevent hostile infiltration.

Reconnaissance on the flanks of the rear guard, and the maintenance of a reserve, will be important, so as to meet attempts of the enemy to interpose between the rear guard and the main body.

Well-handled fighting patrols will often be of the greatest value. By holding off the enemy's reconnoitring detachments, and confusing the enemy with regard to the actual position held, the action of these patrols may give just that extra time which will enable the rear guard to withdraw without becoming closely engaged.

5. *Timing of withdrawal.*—The withdrawal of the rear guard may be carried out in two ways:—

- i. On a timed programme, by fixing definite times up to which successive positions must be denied to the enemy. This will usually be the method when the pressure is close.
- ii. By giving the rear guard commander latitude as to his time of withdrawal, provided that the protection of the main body is assured.

In a timed programme the rear guard may, in order to maintain its positions to a fixed hour, have to undertake close fighting or to deliver a counter-attack. When a rear guard becomes closely engaged late in the day and its lines of withdrawal are under enemy observation, it may prove advisable to maintain the position, until the approach of dusk prevents or hampers enemy observation and facilitates concealment of the withdrawal. Withdrawals by night are dealt with in Sec. 86.

6. *Occupation of successive positions.*—Successive main positions should be far enough apart to force the enemy, after deploying for attack on one, to move his artillery before attacking the next: this will usually mean with forces of all arms that they should not be less than about two miles apart. Whenever possible, a part of the rear guard consisting of fresh infantry units should be sent back in time to occupy the next main position in rear before the withdrawal from the previous one is complete; this will enable a well-organized defence to be established in good time on the new position, under

cover of which the remaining troops can reform on withdrawal. This may not always be possible when the rear guard is responsible for a wide front; but in any event reconnaissance groups (*see* Sec. 39) should be sent back at the earliest possible moment, which, in addition to preparing the scheme of defence, must reconnoitre routes to the new positions. A party composed of representatives from the various sub-units in the battalion should also be sent back to make preliminary arrangements for defence (*e.g.* pegging machine gun positions), to act as guides and to provide a nucleus garrison. The provision of mechanized transport for those parties should be arranged whenever possible.

It is always desirable that, once rear guard troops have disengaged from the enemy and have left a position, they should be able to go straight back through a position already held. It may therefore be necessary, when the rear guard is being closely pressed, to occupy intermediate positions between the successive main positions: such intermediate positions are only intended to be held for a sufficiently long time to cover the retirement of the rearward troops, to allow them, if necessary, to reform, and thus to maintain an orderly withdrawal.

A running fight must be avoided at all costs.

7. *Withdrawal from a rear guard position.*—The method of withdrawing infantry from a rear guard position when engaged with the enemy will generally be to thin out the garrison gradually until only small rear parties are left.

A portion of the rear guard will usually take up an intermediate position to cover the final withdrawal and to take advantage of the targets which will often be offered by the enemy as he arrives on the vacated position; but this intermediate position will only be held long enough to give the last troops, whose retirement has often to be made at speed, time to collect and reorganize before continuing the withdrawal; fighting on an intermediate position should be avoided as far as possible.

The whole operation requires most careful control. The withdrawal of rear parties along the whole front must be closely co-ordinated, in order that an intact front may be maintained to the last and the formation of gaps, through which the enemy may penetrate, may be prevented. The withdrawal may be co-ordinated in one or more of the following three ways:—

- i. By laying down that no withdrawal will take place before a given hour:—for example when concealment of the intention to withdraw is important.

- ii. By fixing the time at which the forward line of defended localities will be abandoned.
- iii. By indicating a line behind the line of forward defended localities which the rear parties are to cross at a given time. The artillery will then know the situation and can apply fire accordingly.

The time at which the process of thinning out may begin may also be laid down; this time may vary on different portions of the front.

It is important that the enemy should remain in ignorance as long as possible of the start of the withdrawal, or he may press home his attack relentlessly. Success will depend largely on the care with which the unobserved withdrawal from the position has been prepared; lines of withdrawal should afford cover from ground and air observation.

Some machine guns should be detailed to form the backbone of the rear parties; a proportion of the personnel should be sent back to a rendezvous in rear before the final withdrawal, leaving only the minimum number necessary to bring the guns out of action. These, with the section commander and observer, can be carried a short distance on the vehicles and so may be among the last to evacuate the position.* Machine guns in armoured carriers are particularly suited for this task.

Mortars with the forward companies will be valuable; they will impose caution on the enemy as he advances and, when withdrawal takes place, may cover with smoke the evacuation of the last elements.

8. *Rendezvous*.—For each unit and sub-unit a rendezvous should be selected by its commander where he can once more gain complete control of his command. These rendezvous, together with lines of withdrawal, should be reconnoitred and made known to all concerned. The rendezvous should be under cover, and easily distinguishable; they should be sufficiently far back to allow assembly to take place without interruption, but not so far as to delay unduly the resumption of control. At these rendezvous a reasonable degree of dispersion must be maintained to avoid offering conspicuous and vulnerable targets to hostile aircraft. If a platoon rendezvous is too far back, there is a danger of sections becoming lost, particularly if section commanders have become casualties. Company vehicles should be waiting at company rendezvous, so that light machine guns and anti-tank rifles may be loaded and the maximum mobility obtained at the earliest moment. The position of the battalion rendezvous should, if possible, be in rear of covering troops; in moving into a previously

* This applies to horse-drawn transport only.

reconnoitred position a battalion rendezvous will not as a rule be necessary. These arrangements are of particular importance in a withdrawal by night.

9. *Counter-attacks*.—It may sometimes be necessary for a rear guard to make a counter-attack, either to disengage a portion of the rear guard which has become seriously committed; or to re-establish the situation at a place where the enemy has broken through; or to take advantage of a favourable opportunity to strike a blow at a portion of the enemy's advanced troops and so to impose caution on him. The objective of such a counter-attack must be limited, and the attack should be supported by all artillery fire and other means available; if well planned and suddenly delivered, it will often have an easy success, which must not be pressed too far or the counter-attacking troops may be cut off. Skilfully laid ambushes may also, on occasions, be employed to impose caution on the enemy.

10. *Administrative arrangements*.—In the programme for the withdrawal arrangements should be made for all unnecessary transport and administrative personnel to move as early as possible, due regard being paid to the danger of the intention being disclosed to aircraft. The evacuation of wounded will require special consideration.

11. *Intercommunication*.—Notification of all moves of headquarters will be of particular importance; if the withdrawal is being closely followed up, the commanding officer should remain back in close touch with the progress of the withdrawal. Arrangements should be made for liaison between companies and with flanking units.

61. Protection at rest

1. *General considerations*.—A force halted protects itself on exactly the same principles as a force on the move, by sending out protective detachments in every direction from which hostile approach is possible. The objects of these detachments, known as *outposts*, are to prevent the enemy's reconnoitring detachments from obtaining information, to obtain information of the enemy's approach, and, if attacked, to gain sufficient time by resistance to enable the main body to prepare for action.

2. *Reconnaissance*.—Every body of the enemy within striking distance should be so closely watched that it can make no movement the nature of which is not discovered. Distant reconnaissance will be carried out from the air and by mobile troops. Standing and reconnoitring patrols (*see* Chapter IX) will carry out reconnaissance up to a forward line which may

be defined by battalion or brigade commanders. Special observation posts will be manned under battalion arrangements, and sentry posts established by the forward companies.

In addition, fighting patrols (*see* Sec. 49, 2), which will normally be detailed only by battalion or higher commanders, may be given the task of driving off enemy reconnoitring detachments or of obtaining enemy identifications.

RESISTANCE

3. *Strength of outposts.*—The strength of troops employed on outpost duty should be kept to the minimum consistent with reasonable safety; otherwise the efficiency of the force will suffer from lack of rest. At the same time they must be organized to meet any form of attack which can be delivered by the enemy; there are three contingencies to be considered:—

- i. When beyond striking distance of the enemy's main forces.
- ii. When within striking distance of the enemy's main forces.
- iii. When in close contact with the enemy, *i.e.*, protection during battle.

When opposed to an irregular or savage enemy, it should be assumed that he is at all times within striking distance, and protective measures should be arranged accordingly.

Outpost troops should always be in a high state of readiness for action. They should hold their ground, if attacked, as resolutely as in any other defensive position. They will be withdrawn only by the commander of the force.

4. *Beyond striking distance of the enemy's main forces.*—When beyond striking distance of the enemy's main forces, the task of the outposts will be to guard against disturbance by hostile patrols of mobile troops, and particularly by armoured fighting vehicles. The outpost position will therefore be selected largely with regard to its natural possibilities for anti-tank defence.

When the enemy possesses mobile troops with a long range of action, the force may be liable to attack from other directions as well as from the front. To meet this danger, areas of unit's responsibilities will be laid down.

Battalions will billet or bivouac in depth with protective detachments pushed out to block the roads and approaches; the strength and composition of these detachments will vary with the situation, and arrangements should be made to co-ordinate the infantry anti-tank weapons and artillery. Dispositions may often consist of an outer ring of road blocks

(*see* Sec. 56, 2) with the longer range anti-tank weapons in depth covering wide areas.

Fire positions will be prepared for each detachment, and all roads and approaches should be blocked.

By day machine guns can be used to cover gaps between detachments guarding the main approaches. By night they may be used either singly or by sections, to provide concentrated fire on any well defined target such as a bridge, or on lines of advance which might be used by the enemy. The extent to which patrolling between detachments will be necessary by night will depend on the situation.

Every battalion should know clearly what action it must take should an attack take place. The outpost commander of the area will co-ordinate the action of individual units by indicating the outpost line and the policy of defence; reserve sub-units will have definite alarm posts and be so disposed that the forward detachments can be supported at short notice if necessary.

Troops not on outpost will also be given alarm posts and will be so disposed that defence in depth is provided on an area basis.

5. *Within striking distance of the enemy.*—When within striking distance of the enemy, the force should be deployed to an extent sufficient to meet any form of attack possible. The force commander will lay down the general line which his protective detachments will take up in order to cover the main body. Its distance in front of the area to be defended by the main body in case of attack will depend mainly on the existence of suitable ground for defence; it should be sufficiently far in advance to give the main body time to prepare for action, but not so far in advance as to be dangerously isolated. The existence of an anti-tank obstacle may influence the choice of the position.

The occupation of the outpost position, which may often have to be done hurriedly, and co-ordination between the various sections, will be facilitated if the general line of defence can follow some well-defined natural feature such as a line of high ground, a road or a railway.

The procedure for the occupation of the position, the principles of defence and the orders to be issued will be similar to those for any other defensive position (*see* Chapter XII), except that, as they are more widely dispersed, the mutual protection of localities may not always be possible.

6. *Protection when in close contact with the enemy.*—When two forces finally come into close contact, each will be deployed

on its battle frontage and will be maintained in a state of complete readiness for action. Forward units will protect themselves by means of sentries and patrols. It may occur in these circumstances that no orders can be issued by superior authority as to measures of protection. The commanders of advanced troops are responsible for taking the necessary steps for securing themselves against surprise, for keeping in touch with the enemy and for informing their superiors of the situation.

7. *Duties of the commander of an outpost detachment* :—

i. *Occupation of position*.—As soon as the commander of a protective detachment has received his orders, he will send out patrols to guard against surprise and will move his detachment, by a covered approach if possible, to a place in rear of the locality for which he is responsible.

He will examine the ground and decide on the number of posts that he will require, remembering that no more should be used than are absolutely necessary. By night and in foggy weather, double sentries will be posted; any required for night dispositions only will not be posted until after dusk, care being taken that there is no danger of their being cut off and that they do not mask the fire of the detachment.

ii. *Organization of position*.—He will then explain his orders to the men and will detail the various duties and their reliefs, including one or more sentries over the detachment for the purpose of warning it in case of attack. In order to prevent the men being disturbed unnecessarily by night, he should arrange that the N.C.Os. and men of each relief of the various duties bivouac together, and apart from the other reliefs. All reliefs should know exactly where to find the men of the next relief.

He will ensure that every man knows the direction of the enemy, the position of other protective detachments in the vicinity, and what he is to do in case of attack by day or by night. Having decided on his posts, he will ensure that their commanders and the sentries know their duties (*see Infantry Section Leading*). It will be important for every man to get a clear mental picture of his surroundings while daylight lasts. Sentries should be visited at intervals to ensure that they are alert and know their duties.

He will see that each man understands that it is his duty to hold his ground to the end. The post or locality will be strengthened, fire positions reconnoitred and communications improved, where necessary. An obstacle, even if it is only a single trip wire, should be placed out in front, and in the case of roads barricades will be erected.

The comfort of the men should be considered and sanitary arrangements made. He will maintain communication with the troops on either flank, arranging with them for mutual fire support where possible.

8. *Rules for outpost duty* :—

i. *Standing to arms*.—Shortly before dawn or at dusk are times which are frequently chosen for an attack on an outpost position; an attack at dusk may be made to secure the ground which the outposts hold, with a view to entrenching it during the night; or troops may be brought up under cover of darkness to rush the outpost position at dawn. Outposts, like other troops in defence, will therefore stand to arms one hour before dark and one hour before it begins to get light, and will send out patrols; they will remain under arms until the patrols report that there is no sign of an attack.

ii. *Collisions with the enemy*.—The commanders of forward detachments in close proximity to the enemy will avoid useless collisions with the enemy; attempts to carry off posts or sentries, unless ordered for the purpose of obtaining identification or for some good reason, should be avoided, since they give rise to reprisals and tend to disturb the rest of the outposts and of the main body.

iii. *Alertness*.—The troops on outpost duty will always be ready for action and will not remove their equipment without special orders from the commander of the outposts. By day not more than one or two men should be allowed to leave a post at any one time; by night all men other than patrols will be with the detachment, and not less than one-third of each detachment will be awake manning its fire positions.

iv. *Obstacles and communications*.—Outpost positions will invariably be strengthened as far as time permits; it is particularly important to place an obstacle, when possible, before the positions of the forward defended localities. Communications should be improved and tracks marked where necessary. Intercommunication should always be arranged between the various portions of the outposts and between the outposts and the main body.

v. *Detached posts* may occasionally be necessary in front of or on the flank of an outpost position, in order to guard some locality that cannot be included in the general line of defence, where the enemy might collect preparatory to an attack or which he might occupy for purposes of observation. Such detached posts have the disadvantage of isolation, and the outpost commander should decide whether the value of a detached post is sufficient to justify the risk of its being cut off.

vi. *Passage through outposts.*—No one other than troops on duty, prisoners, deserters from the enemy, and flags of truce, will be allowed to pass through the outposts, either from within or without, except with the authority of the commander who details the outposts. Inhabitants with information will be blindfolded and detained at the nearest post pending instructions, and their information sent to the outpost commander. No one is allowed to enter into conversation with persons presenting themselves at the outposts, except the commander of the nearest platoon, company or detached post, who should confine his conversation to what is essential. Prisoners and deserters will be sent at once, under escort, to the authority appointed to interrogate them.

Where there are large numbers of refugees, it will be impossible to prevent them crossing the outpost position. Special arrangements will be necessary for their collection and for their subsequent disposal.

CHAPTER XI

ATTACK

(To be read in conjunction with *Field Service Regulations, Vol. II, 1935, Chapter VI*)

62. Advanced guard fighting

1. *Distribution.*—As a force advances, it will be covered by its advanced guards (*see Field Service Regulations, Vol. II, 1935, Sec. 41*). When contact with the enemy becomes probable, tactical considerations become paramount, and the force may advance in several columns. It will be so disposed that it can be deployed rapidly, each column being covered by its own advanced guard.

2. *Action of mobile troops.*—First contact with the enemy is likely to be gained by the mobile troops (*see Field Service Regulations, Vol. II, 1935, Sec. 42*), which may have been given the task of reconnaissance or of seizing and holding some important tactical feature until the arrival of the infantry. As these mobile troops will often be operating on a wide front a considerable distance ahead of the main body, they cannot be relied on for local protection, and early warning of impending danger is usually all that can be expected from them. It may often be necessary for the leading infantry of the vanguard to assist the mobile troops in dealing with minor opposition, and commanders of advanced guard battalions should be prepared to move forward without delay so that plans can be made and put into action at short notice.

3. *Action of forward battalions.*—The time will come when the mobile troops are definitely held up.

At this stage it is unlikely that the information required by the commander can be obtained by patrols alone; it will be necessary to gain closer contact with the enemy along his front, to drive in or pierce the hostile protective troops and so gain the information and ground which the commander requires before he can form his plan and deploy his troops for the attack. This will entail fighting, and is a task for which all arms will be required.

As contact is gained, infantry units will deploy on to a wider front, companies making full use of tracks and cross-country

lines of advance. Arrangements should be made for the leading infantry of advanced guards to operate on a co-ordinated plan. Time will be of the utmost importance in order that the hostile advanced troops may be driven in before the enemy's main body has time either to develop an offensive movement or strengthen his defences. Reconnaissance groups (*see* Sec. 39) must therefore be immediately available, decisions must be made quickly and the plan must be simple and one that can be put into effect rapidly.

Deployment on a wide front within the limits necessary for the maintenance of control will often be justified, particularly if there is a possibility of locating the enemy's flanks. This will force the enemy to disclose his strength; the wider the front the greater is the likelihood of weakness in the defence being discovered. Penetration should be attempted where weakness is disclosed, so as to drive back the enemy and to secure those objectives which will best assist the subsequent action of the main body; such as important topographical features, favourable observation posts and view-points, villages which block the roads on the line of advance or woods which provide cover for deployment.

When, however, the enemy resistance is weak and can be dealt with by bold and rapid offensive action by the leading infantry, the delays caused by a wide deployment may not be justified.

When infantry tanks are allotted to the advanced guard, they may be employed to support the infantry in either of the following ways:—

- i. Small parties of tanks (one or two sections working with the leading companies of a battalion of infantry) working in advance of the infantry and searching out machine guns and little centres of resistance.
- ii. Small parties of tanks following behind the leading infantry by short bounds ready to be brought up directly the infantry is stopped by some local resistance which it cannot overcome quickly enough by itself, and going to heel again directly the resistance is overcome.

In both the above methods tanks and infantry work close together and help each other, the tanks dealing with the machine gun opposition and the infantry helping to deal with the anti-tank gun.

4. *Artillery, machine gun and mortar support.*—As in all attacks, it is essential to allot sufficient fire resources to make success reasonably certain. Battalions will advance with the support of such artillery, machine guns and mortars as are

immediately available. The outstanding features of this phase are:—

- i. Lack of information as to where the enemy really is.
- ii. The need to push on rapidly; as the enemy resistance is unlikely to be highly organized or in great depth pauses for the formation of elaborate fire plans should rarely be necessary. In such circumstances bold and vigorous action by the artillery is essential. Artillery support, rigidly applied by time-table, will serve to impede rather than to assist the rifle companies by restricting their initiative and power of manœuvre. Moreover, time and information may be lacking to make a pre-arranged programme effective and communications for centralized control of the artillery will not exist; artillery support can therefore usually best be given by observed fire.

As the leading troops fight their way forward, they will eventually encounter stiffening resistance and localities of such strength that it may be necessary to organize a fire plan of artillery, machine guns and mortars to deal with successive localities to a limited depth by means of a short time programme. (Sec. 63, 9.)

5. *Action of rifle companies.*—Forward rifle companies will be directed against definite objectives; inter-company boundaries may be given, but they will seldom be necessary, as companies can establish communication on each objective.

When the leading rifle companies come under the effective fire of machine guns and rifles, they will be forced to fight their way forward with their own weapons and such assistance as may be obtained from machine guns, mortars, artillery and possibly tanks.

The action will be one of fire and manœuvre. Battalion commanders should be well forward, so that they can keep in close touch with the situation and exercise their influence on the fight without delay. Modifications in the detail of the plan will be necessary as the situation develops and the battalion commander must be ready to organize quickly plans for the support of the leading companies with the fire resources at his disposal, to preserve the momentum of the advance. In principle he will employ his reserve where any weakness is discovered in the enemy's defences; and by penetration will endeavour to turn the flanks of the defences. Success at any one point will usually be sufficient.

When, owing to increasing enemy opposition, the advance shows signs of coming to a standstill, commanders should take steps to ensure that all necessary view-points and tactical

features on the front are seized and held, in order that the further attack may be planned and prepared successfully. Observation is essential, not only for the preparation of an attack, but also for giving adequate support to the subsequent advance. Intelligence sections and the leading troops of forward battalions should be active at this stage, reconnoitring the best view-points and endeavouring to locate accurately the enemy positions, defended localities and observation points.

63. General considerations affecting the attack

1. *General.*—The general principles governing the planning and conduct of an attack are described in Field Service Regulations, Vol. II, 1935, Secs. 55 to 57. The chief assets of the attacker lie in the possession of the initiative and his ability to select the time, place and method of attack and so gain surprise; the attacker has also a considerable moral advantage.

The defender, on the other hand, has generally the advantage of selecting the ground best suited for his purpose and of organizing his fire.

For the advance to be possible, the effect of the fire of the defence must be minimized.

The methods which may be employed are :—

- i. Avoidance of the fire by manœuvre and the use of ground.
- ii. Neutralization of the enemy's fire by fire or smoke.
- iii. The use of darkness to achieve surprise and to render aimed fire impossible.

What combination of these methods is employed and how they are applied will depend on the nature and degree of resistance which the enemy is expected to offer.

In consequence attacks may be divided broadly into two types depending on whether they are against organized (see paragraph 2, below), or unco-ordinated resistance (see paragraph 3, below). Between these two types there are many varying stages, and the time and preparation necessary for the organization of the attack will vary accordingly.

If the enemy's position is protected by wire, the co-operation of tanks or a wire-cutting programme by artillery will be needed. When wire cutting has been carried out by the artillery, it should not be taken for granted that the wire is passable, and it is the responsibility of the infantry commander to ensure by reconnaissance that it has been adequately destroyed before the infantry is launched to the attack. Once wire has been cut, the infantry should ensure by the use

of small arms fire that it is not repaired or replaced by the enemy.

2. *The attack against organized resistance.*—When the enemy has had the necessary time to organize his defences (see Field Service Regulations, Vol. II, 1935, Sec. 68), it is likely that he will be occupying a series of defended localities arranged in depth and affording each other mutual support with a co-ordinated belt of fire of all arms across the front. A considerable proportion of the small arms fire is likely to be flanking fire from positions defiladed from the direct front.

In such cases to attack by day with any hope of success without excessive casualties requires deliberate and methodical preparation and the provision at the outset of extensive support to keep the fire of the enemy in subjection. The characteristics of such an attack will usually be :—

i. The initial attack, supported by smoke, artillery, machine guns and possibly tanks on a timed programme to gain clearly-defined objectives. During this phase the infantry attack will go through to the full distance that pre-arranged supporting fire and tanks can take it, with only such pauses as are necessary for control.

ii. A subsequent phase, in which the objectives already secured are used as jumping-off places for attacks designed to keep up the momentum of the advance and to increase the enemy's difficulties in organizing a counter-attack. The enemy resistance is now likely to be less fully organized and the method of attack will be as described in paragraph 3, below.

Speed in the organization of the attack will be of importance, as the position will constantly be strengthened by wire obstacles and digging.

In the attack under a comprehensive programme the security of the leading infantry and the success of the operation will depend mainly on the ability of the infantry to move forward close under cover of supporting fire. To do so, the advance should be carried out steadily and without checks; infantry should not stop to open fire unless forced to do so by the failure of the supporting fire to achieve its object.

An extreme form of this type of attack is met in position warfare, the conditions of which and the special arrangements necessary to meet them are described in Field Service Regulations, Vol. II, 1935, Chapter IX.

3. *The attack against unco-ordinated resistance.*—When the enemy is occupying a hastily prepared position, or his resources are inadequate or his troops demoralized or tired, or his foremost defences have been penetrated by an organized attack,

it is unlikely that his resistance will be fully co-ordinated. He may be defending the ground in a series of localities, with little depth, and between which there may be gaps or weak spots giving opportunity for penetration and manœuvre.

In these cases speed in launching and carrying through the attack gives the greatest hopes of success. The attack should strike at the defence before it has time to stabilize. Lack of information regarding the enemy may render it impossible to make any elaborate plan of supporting fire or to select distant objectives in detail.

The aim of the attack should be, as a general rule, to attack weakness rather than strength, and to exploit opportunities for infiltration to the utmost.

In selecting objectives it should be remembered that the more important tactical localities are likely to be most strongly defended; also that close country which limits the enemy's field of fire is likely to offer the best opportunities for penetration by the attack, and in such country the lack of supporting fire will be less vital.

The distribution of troops will be such that power of manœuvre is maintained for the maximum number, the minimum of troops being used for the first contact. When penetration has been effected on any portion of the front, it should be exploited by the reserves, whose task should be to widen and deepen the gap that has been made.

The characteristics of this form of attack will therefore be :—

- i. A plan quickly organized and limited in its scope.
- ii. General reliance on infantry fire and manœuvre and the use of ground with such additional support from other arms as may be immediately available.
- iii. The leading infantry moving forward with boldness, seeking opportunities for infiltration and taking risks, with the knowledge that any success achieved will be supported.
- iv. The infantry advance progressing from objective to objective, a fresh plan being rapidly formed as each objective is reached.
- v. Infantry commanders well forward, with their reserves readily available to influence the fight. It is only by the quick and intelligent handling of reserves that the measure of surprise, essential for success in this form of fighting, can be achieved and the enemy prevented from making use of delays in the attack to improve his defence.

4. *Use of ground.*—The skilful use of ground assists surprise, conceals movement and enables losses to be minimized. Any tendency to rely on maps and to neglect the study of

ground is to be deprecated; the map should be used in preparation for a view of the actual ground and in confirmation of, and to supplement, what the eye can see.

In the attack the ground, air photographs and the map should be carefully studied in order to find :—

- i. Covered approaches. Close or wooded country will offer special opportunities for a concealed advance and for outflanking or surprising the enemy.
- ii. Positions from which observed covering fire can be brought to bear.
- iii. Features which when occupied or captured will enable the enemy's position to be enfiladed and a flank attack to be made under favourable conditions.
- iv. Ground favourable for the co-operation of armoured fighting vehicles.
- v. Probable lines of advance of hostile tanks and the areas in which hostile tank counter-attacks are likely to be made.
- vi. A line of attack by which the advancing troops will be deflated as far as possible from enemy weapons.
- vii. Facilities for concealment from hostile aircraft.

5. *Preparation.*—Every attack calls for reconnaissance and preparation; the procedure during the preparatory phases is described in Chapter VIII.

A commander should be clear in his own mind what his object is; his plan to achieve it should be simple and be based on the best information obtainable; it should be understood by subordinates and be carried through by them with resolution. There should be close co-operation between all arms and services engaged and, throughout the attack, the supporting arms should give all possible assistance to the infantry.

6. *The obscurity of battle.*—Particularly in open warfare, the situation will often be vague and decisions will have to be made on scanty information. Time will be pressing; nerves will be strained, orders may arrive late, messages may be ambiguous, counter orders and misleading information may be received. Added to this there is the noise and confusion of battle, enemy shelling and possibly the necessity of wearing gas respirators. The "fog of war" is no misleading metaphor.

For these reasons simple plans and methods alone are practicable in war.

7. *Control.*—Control is obtained mainly by the following means :—

- i. Issuing clear orders in which definite tasks are allotted to definite bodies of troops, and from which all arms may understand thoroughly what assistance they may expect from each other.

ii. Arranging for observation and for the collection and distribution of information throughout the attack.

iii. Efficient headquarters and means of intercommunication (Secs. 43 and 44).

iv. Maintaining all bodies of troops, at all stages of the attack, in as concentrated a formation as a reasonable degree of security from the fire of the enemy or possible air attack will permit.

8. *Mobility*.—The attacking rifleman should be as lightly equipped as possible. If weight is reduced, the soldier will be less fatigued, will use his weapons more effectively and will move more rapidly.

While the Field Service Manual gives details of the equipment carried in the field, it is the responsibility of higher commanders to decide when and to what extent this can be reduced and to decide on the methods and administrative arrangements necessary for achieving this end.

9. *Artillery co-operation*. (See Field Service Regulations, Vol. II, 1935, Secs. 5 and 63.)

i. *Types of support*.—Artillery support for the attack may take the form of a barrage moving ahead of the assaulting troops, of concentrations on successive localities, of smoke for screening and indicating direction and boundaries, or of a combination of any or all of these forms of fire. Artillery may also be used for a preparatory bombardment, counter-battery fire or harassing fire. It should be concentrated so as to cover those portions of the front where the attack is to be driven home, and co-ordinated with the fire of machine guns.

ii. *Barrage*.—A barrage is the simplest and most effective method of giving support when it is not possible to locate enemy positions with accuracy. The breadth of front which can be covered by a barrage depends on the number of guns available, since the barrage must have adequate density; the depth of ground which can be covered, or the time during which a barrage can be maintained, depends on the amount of ammunition available. It is for this reason that in mobile warfare support in the form of a barrage can usually be given only to a very limited extent.

iii. *Concentrations*.—When the enemy dispositions are known in considerable detail, it may be effective and also economical of resources to employ concentrations of fire on selected areas, particular attention being paid to the probable positions of hostile machine guns.

iv. *Smoke*.—When the number of guns and the ammunition available do not admit of an effective barrage being fired

on the front of the attack, and when the enemy's dispositions are not accurately known, a combination of smoke and concentrations will usually enable the best use to be made of the artillery fire available.

v. *Control*.—Whatever form of support is adopted, the fire plan should, in the opening stages of an attack against organized resistance, be in accordance with a timed programme based on the anticipated rate of advance of the attacking troops, and supplemented by observed fire as far as possible. It is inadvisable to continue a timed programme beyond a limited depth when the enemy's dispositions are indefinite, as it is then liable to impede rather than to assist the attacking troops.

The commander will indicate to the commander of the supporting artillery the localities to be neutralized in the initial stages of the attack. It is usually necessary for the artillery to open fire on the most advanced portions of the enemy's defences; to be safe against initial errors, no infantry should be nearer than 200 yards to the opening burst of fire. Fire, once begun, should remain on this opening line until the foremost rifle companies have closed up to it. Support by observed fire alone cannot be guaranteed, as at any moment communication between the observing officer and his battery may be interrupted, or the observation post may be blinded by smoke or put out of action by fire; also in enclosed country or bad weather the field of vision may be limited.

In the initial stages of the attack against organized resistance artillery command will normally be centralized. But once the timed programme has ceased, the command of the bulk of the field artillery may be decentralized, batteries being detailed to move forward in support of forward battalions. Artillery co-operation may then take the form of observed fire, or of simple timed concentrations directed by artillery observation officers pushed forward to keep in close touch with the attacking rifle companies.

As the artillery commander observes from whatever place is suitable for his tasks, he cannot make the position of his observation post dependent on the position of the battalion or company headquarters; infantry units should, therefore, take steps to ensure the closest possible touch with him during the attack.

Requests for support should be framed in a definite manner. The best results will be obtained if the artillery can be told:—

(a) *The object* for which the fire is required, *i.e.*, the tactical situation briefly, including the position of the foremost infantry.

- (b) *The target* on which fire is required.
- (c) *An observation point* from which the target can be seen. Arrangements should be made, if possible, for the target to be pointed out.
- (d) *The time* at which fire is required, *i.e.*, at once, or after a named interval of time, and during what period.

10. *Gas precautions.*—If the enemy is using gas, he is most likely to contaminate observation areas and probable avenues of approach and forming-up places. Whenever possible, reconnoitring patrols should be sent forward to ascertain whether such areas are free of gas.

If troops who have begun an attack on a timed programme encounter unexpectedly a contaminated area, they should advance through it rather than lose the effect of the covering fire by halting and attempting to find a way round.

The position of the contaminated area should be reported at once, and marked later when opportunity offers.

64. The battalion in the attack

1. *General remarks.*—The following paragraphs apply principally to the action of infantry in an attack against organized resistance, where the attack is supported by artillery and other weapons; their application in detail will depend on the method of attack and the nature of the support available.

2. *Orders from the superior commander.**—A battalion commander will usually be given his task by his superior commander, and should receive all available information regarding the enemy, and the dispositions and movements of friendly troops; he should also clearly understand the intention of the superior commander. In addition he may require information on the following points:—

- i. The frontage of his attack, the objectives and any restrictions as to the line of advance of rifle companies. He may or may not be given boundaries.
- ii. The "starting line" and the time at which the leading troops of his battalion are to cross it (*see* paragraph 5, ii, below).
- iii. The situation on the flanks.
- iv. What covering fire he may expect, and the details of the fire plan.
- v. What armoured fighting vehicles or artillery, machine guns or anti-tank guns are to be placed under his command or in support of his battalion, and, in the case of a mixed battalion, whether there are any brigade tasks for his own machine guns.

* Refers to rifle or mixed battalions.

vi. Whether there are any restrictions as to expenditure or dumping of machine gun ammunition (Sec. 4, 6).

vii. Whether there are any restrictions as to the use of smoke, and, if used in the brigade plan, when and where it will be put down.

viii. The general scheme for intercommunication, including liaison and points of junction with flank units on successive objectives.

3. *Preparation.*—In the preparation of an attack rapidity of action will be essential, while reconnaissance followed by the preparation of an adequate fire plan is of the first importance. The time allotted for the staging of an attack should be sufficient to ensure:—

- i. That men of the rifle companies know their tasks and the help that they may expect from the supporting weapons.
- ii. That they and the supporting arms can be ready and in action by "zero" hour.

The procedure for the avoidance of unnecessary delays by organized methods is described in Chapter VII.

4. *Information and reconnaissance.*—Every endeavour must be made to obtain all possible information about the enemy's strength, dispositions and intentions, and also about the ground over which the attack is to be made. This is obtained by reports from aircraft, by advanced troops in contact with the enemy, by patrols and liaison officers, by the intelligence section and by personal reconnaissance. (*See* Secs. 40 and 45.)

5. *Battalion commander's plan.*—As a result of the orders received from his superior commander and of his reconnaissance, the battalion commander will be in a position to make his plan of attack. A sound simple plan and close co-operation are essential to success.

The battalion commander may have to arrive at decisions on the following, among other, points:—

- i. *The objectives* of the rifle companies and their lines of advance (*see* paragraph 9, below).
- ii. *The starting line* (if not already decided on) and whether the leading troops shall be formed up on it beforehand or cross it at the appointed time, known as "zero." In the latter case a forming up position under cover must also be selected.

It must be remembered that, unless infantry is launched to the attack square to its objective, there is great danger that direction will be lost.

The starting line selected should be one that can be

recognized easily on the ground, and should be not less than 200 yards from the opening burst of the supporting artillery fire.

iii. The phases in which the attack is to be made, and the timing of the advance.

The pace of the advance will depend mainly on the ground ; it may vary from 100 yards in a minute to 100 yards in three or even four minutes (see Field Service Regulations, Vol. II, 1935, Sec. 62, 3).

iv. *The fire plan* (see paragraph 10, below).—Details should be arranged with regard to the timed programme of barrages, concentrations and smoke screens, the allotment of artillery, machine gun and mortar tasks and the action of tanks, if co-operating.

v. *The reserve* (see paragraph 11, below), its composition, assembly position and probable employment.

vi. *Anti-tank protection* (see Sec. 70).

vii. *Administrative details* with regard to such items as ammunition (see Sec. 47), medical arrangements (see Sec. 48), transport (see Sec. 46) and tools for consolidation (see Appendix IV).

viii. *Intercommunication*.—The position of battalion headquarters and its projected line of advance, the allotment of signallers and equipment, tasks for the intelligence section and liaison personnel and details of any special light signals.

6. *Distribution*.—The battalion will be divided into two echelons :—

i. *Forward troops*—consisting of those troops which it is intended to commit to the initial attack.

ii. *Reserves*—consisting of the companies and reserves of fire power which the battalion commander retains under his own hand (see paragraph 11, below).

In making the distribution, the requirements of forward troops and reserves should be considered together in connection with the tasks which they are required to perform. In principle no more troops than are essential to attain their object should be detailed as forward troops. The more scanty the information available regarding the enemy dispositions, the stronger proportionately will the reserve usually be.

7. *Methods of attack against organized resistance*.—An attack will usually be carried out by one of the following methods :—

i. The forward troops may be directed against the farthermost objective, the battalion commander following with his reserve ready to exploit success or to put fresh impetus into the advance. This method will often be preferable when little

is known of the enemy dispositions or when tanks are the main supporting arm.

ii. When extensive fire support is available and the dispositions of the enemy are well known, it may be advisable to attack by a leap-frog method in which the leading troops capture and consolidate some intermediate objective, while others pass through and capture the next one, and so on. This method may facilitate the maintenance of organization of the leading sub-units when attacking on a timed programme ; it is, however, more deliberate and less flexible than the method of attack previously described.

There are many variations in the application of these two methods. For example, if there is some locality or feature of tactical importance on the battalion front the possession of which appears to facilitate the further advance to the objective, the battalion commander may decide to capture it as his first bound. Such a task may often be suitable for one rifle company, arrangements being made to support it with all the fire resources available ; the protection of the flanks of the company will be especially important and it will often be necessary to push forward machine guns, as soon as the locality has been captured, to assist in consolidation and to provide the covering fire for a further advance.

Whatever method is adopted, once the timed programme has come to an end, the advance will proceed as described in Sec. 63, 3, unless the objectives are strictly limited in the intention of the superior commander.

8. *Frontages*.—The fronts which may be allotted to infantry units cannot be made the subject of rules ; they depend on the method of attack, the nature of the ground, the tank and artillery support available, the morale and armament of the enemy and on special factors such as fog and darkness.

A limiting factor is the control of the commander, be he platoon, company or battalion commander ; on no account should infantry battalions be so extended that efficient control is endangered.

Large frontages may sometimes entail reductions in depth and reserves ; but a unit allotted a wide front need not necessarily employ more men in proportion, as a wide front, wisely allotted, may allow gaps which give room for manoeuvre. On other occasions ground and other conditions may make it advisable to attack in depth on a portion of the front only, companies working out to the flank on reaching the objective.

9. *Selection of objectives*.—(See Field Service Regulations, Vol. II, 1935, Sec. 56, 3.)

Usually a battalion commander will be allotted the frontage of his attack and the objectives which he is to capture; he may also be given boundaries. Within these limits, depending on the method of attack, he will as a rule be at liberty to decide what intermediate objectives are necessary, and the lines of advance of his rifle companies.

Although the objectives will often necessarily be commanding features, such ground will usually be most strongly defended, and, when possible, should not be directly attacked, but dealt with from the flank after penetration has been effected.

The objectives should be easily recognizable on the ground, and each should be selected with a view to the development of the next stage of the attack.

Consideration should also be given to the lines of advance, and whether, by being defiladed from enemy fire, economies in covering fire can be made. The effect of obstacles should also be considered, with regard to their effect on the line of advance and also on the protection which they afford against counter-attack, particularly by tanks.

The final objectives of a unit or sub-unit should be fixed at the furthest limit to which it is likely to maintain the vigour of its attack, according to the conditions of ground, the tank and fire support available and the estimated strength of the enemy's resistance. Care should however be taken not to over-estimate the capacity of any unit, as a unit over-taxed is often an easy prey to counter-attack and may thus suffer a considerable loss of morale which takes time to restore. Although inter-company boundaries may be given, it is generally preferable to give to each a line of direction in conjunction with their objectives; companies will keep in touch with others on their flanks during the attack and effect contact on each objective. (*See Field Service Regulations, Vol. II, 1935, Sec. 56, 4.*)

Compass bearings will always be given and landmarks indicated wherever possible.

10. *The fire plan.*—A co-ordinated fire plan on a timed programme will generally be advisable at the beginning of an attack against organized resistance. The object of the fire plan will be to keep the enemy's fire in subjection or to blind it with smoke until the rifle companies are within assaulting distance.

Details with regard to the employment of artillery in the fire plan are given in Sec. 63, 9, and of machine guns in Sec. 68.

Sufficient covering fire will seldom be available to support an attack on the whole front; the main attack will therefore

be launched on that part where success promises the most far-reaching results. In selecting the front of attack it will often be found that the ground most suitable for the development of covering fire will also be the ground most easily swept by the fire of the defence. On the other hand, in close country where the fire of the defenders and their observation will be restricted the development of supporting fire may be more difficult. A balance should be struck between these conflicting factors, the main consideration being the advance of the rifle companies with the minimum casualties.

Hostile defences on the flanks of the attack should be neutralized by fire or blinded by smoke, superiority of fire being provided on a wide enough front to preserve the mobility of the attack and to prevent it being stopped by flanking machine gun fire.

It will depend on the estimated strength of the enemy's dispositions, the amount of support available and suitable facilities for observation whether the fire plan is arranged to cover the advance of the rifle companies to their final objective. If the position is not organized in depth, it may be possible and preferable for the later stages of the advance to be carried out by the infantry, making use of manoeuvre and ground with such fire support as can be quickly organized (*see Sec. 63, 3*). If, however, the position is organized in depth and little is known of the enemy rear defences or observation of them is not available, a check on an intermediate objective may be necessary, so that a fresh fire plan may be made, unless tank assistance is available.

11. *Reserves.*—The reserve is the chief means in the hands of the commander to influence the attack once it has been launched. A commander must be quite clear regarding the purposes for which his reserves may be required, and they should be composed with these objects in view. The requirements of forward troops and reserves should be considered together, and, if the troops are insufficient, the scope of the attack should be curtailed.

The reserve should consist of a complete tactical unit or units. The uses for which reserves may be employed in the attack may include the following:—

- i. To maintain the momentum of the attack (*see paragraph 12, below*).
- ii. For the exploitation of success.
- iii. To meet a threat against a flank.
- iv. For consolidation.

In addition an important reserve in the hands of the

battalion commander will be the fire of the supporting units at his disposal (machine guns, mortars and artillery). The application of this fire is governed by principles similar to those for the handling of his other reserves.

A principle in the use of reserves is that they should not be used to reinforce troops held up in the hope of carrying a position by weight of numbers. To attempt this is merely to multiply the losses unnecessarily. Either the attack should be pressed at other points where progress is still possible, or sufficient additional fire power or tanks should be applied to keep in subjection the enemy fire which has checked the advance.

The initial attacks, if successful, will result in a series of penetrations into the enemy defences, of which full advantage should be taken. Reserves of forward units should be used to exploit tactical success and to widen and deepen any penetration that has been effected. Reserves should be moved forward by bounds as the attack progresses, so that they can be used with a minimum of delay when required, but they must not be placed so far forward that they suffer undue losses, become prematurely involved or lose their power of movement. The commander should locate his reserves in accordance with their probable roles, bearing in mind the importance of:—

- i. Communications.
- ii. Mobility.
- iii. Concealment.
- iv. Keeping them clear of the battle until required.

As his reserves are thrown into the fight, the battalion commander should at once attempt to replace them by forming a fresh reserve from troops whose immediate task is finished, or which can be made available from another portion of his front.

12. *The conduct of the attack.*—During the course of the attack, it may be found that on portions of the front the fire plan has been inadequate to enable the forward troops to reach their objectives and that an enemy locality is still holding out. This should not be allowed to check the advance on the remainder of the front and the attack should be strongly pressed where progress is still possible. The battalion commander should move forward his reserve in the wake of the troops which are still able to advance, using a portion of it, if necessary, to deal from a flank with resistance which is holding out.

Commanders should keep themselves fully informed with

regard to the progress of their forward troops, by patrols, the intelligence section and by personal observation.

A time may come when the forward troops are unable to make further progress and a fresh fire plan will then be necessary. On no account should fresh rifle companies be sent forward to attempt what has already proved to be impossible without re-organized support. It will often require more than a fresh fire plan to enable forward troops which have been pinned to the ground for some time to advance. The battalion commander may therefore decide to employ his reserves for the renewed attack. If, however, tank support is given, the moral effect of their advance will often be sufficient to enable the original rifle companies to continue the advance. Forward troops should at all times be ready to seize such an opportunity, even though they have not been aware that tank support would be forthcoming.

13. *Attacks against unco-ordinated resistance.*—The method of attack against unco-ordinated resistance where no timed programme has been arranged has been described in Sec. 63, 3. The broad principles generally applicable to this type of fighting include the bold use of fighting patrols to locate the enemy's strength or weakness, the selection of lines of advance offering the best opportunities for success, penetration by reserves where breaches have been made in the enemy's position, the enlargement of gaps so made by attacking in flank enemy still holding out and securing objectives suitable for the development of fire-power to support a further advance, a fresh plan quickly made and the momentum of the attack maintained by the use of reserves to exploit success. The action of rifle companies in this type of attack is described in Sec. 66, 4.

65. Attacks in co-operation with tanks

1. *General.*—The characteristics of tanks in general are described in Field Service Regulations, Vol. II, 1935, Sec. 2, 2, and those of army tank battalions in Sec. 2, 5. Details of the action of army tank battalions in the attack are contained in Field Service Regulations, Vol. II, 1935, Sec. 60. Particularly when the enemy defences are protected by wire obstacles or stiff hedgerows, the employment of tanks may be the only means of obtaining surprise as regards the point of attack. The attack of tanks and infantry in co-operation has also the advantages that it can often be more rapidly organized than an infantry attack supported by artillery and machine guns, that it is more flexible when confronted with unexpected centres of resistance and that it is able to keep the enemy

fire in subjection to a later stage without risk to the attacking infantry.

Tanks will not normally be employed to co-operate with infantry until opposition has been definitely located and an organized attack has become necessary. They will then be employed in sufficient numbers to enable them to operate in depth, while affording each other mutual support and avoiding large gaps in which the enemy are not neutralized. They should be deployed on a front sufficiently wide to subjugate all hostile small arms fire that might prevent the infantry from reaching its objective and that is not already being neutralized or screened by other means. In order to effect this, they may have to operate on a wider front than the attacking infantry.

The task of the tanks will be to enable the infantry to advance by silencing the enemy small arms fire which is holding it up. In order to do this, each unit of tanks should be responsible for the advance of a unit of infantry on to a definite objective. Whether they advance frontally against the objective, passing through the leading infantry, or approach the objective from a flank will depend on the ground and the facilities for affording them adequate artillery and machine gun support. Approach from a flank at right angles to the infantry line of advance is seldom practicable with a unit larger than a company of tanks.

2. Tanks may be used in the initial stages of the attack to break through the enemy's front defence. On such occasions tanks will usually be the main assaulting arm, and the artillery and machine gun fire plan will be arranged mainly with the object of supporting the action of the tanks against the anti-tank weapons of the defence. Successive objectives will be secured by the tanks and the task of the infantry will be to take over the ground won, to clear it of the enemy and to consolidate.

It is essential that the interval between the arrival of the infantry and the tanks on successive positions should be reduced to the shortest possible period. The infantry should therefore work up to positions as close as possible to the enemy before advancing under the support of the tanks. Sometimes it will be necessary for the infantry to start its advance before the tank attack is actually launched. As a general rule a slackening in the enemy's fire caused by the tanks should indicate to infantry commanders the opportune movement for their forward movement.

Platoon and company frontages will depend on the resistance anticipated and will be fixed to ensure that there are adequate

troops on the objective to deal with the close fighting which may ensue during the "mopping up" process.

If enemy localities have to be passed before the final objective is reached, the rifle platoons responsible for clearing these localities must be detailed beforehand and arrangements made for other platoons to pass through them to the objective, so that the tanks shall not be delayed. On no account should assaulting infantry turn aside to deal with resistance on their flanks; such localities must be left to be dealt with by the reserves.

3. When infantry is the main assaulting arm, tanks may be used to maintain the impetus of the attack. They may be allotted so that they can be made available at short notice to deal with any opposition that is preventing the infantry from establishing itself on the objective. On other occasions, when infantry has been used to capture the initial objectives, tanks may be reserved to support a further advance.

In the above cases the tanks will be held in reserve. Time will be an important factor and the tanks will therefore often be placed under the command of forward rifle battalion commanders. Tanks so employed will be allotted a definite and limited objective, as the nature of the attack may render it impossible for adequate supporting fire to be given against anti-tank guns. The tanks will rally under cover as far forward as possible, ready to repel counter-attacks or support a further advance. Whether the tank advance is made frontally or from a flank will depend on the ground, the possibility of affording them covering fire and the necessity to crush a passage through wire for the leading infantry while avoiding interference with its advance. Whatever the line of advance, the aim of the tanks will be to deal with such opposition as is holding up or is likely to hold up the infantry advance.

It will depend on such circumstances as the state of the forward troops, their position in relation to the tank line of advance and the objective, and the time factor, whether the attack will be made in co-operation with fresh infantry from the reserve or with those already committed. In order that the tanks may not be exposed to the losses which an unduly long pause on the objective would entail, and in order that the enemy may have no time to recover from the fire and moral effect of the tanks, it is essential that the infantry should seize at once any opportunity to advance that the action of the tanks presents.

While it is the task of the tanks to subdue the small arms fire of the enemy, the infantry in return must do its utmost to

put the enemy anti-tank guns out of action or to limit their effect. Anti-tank detachments must be attacked with vigour whenever located by the forward platoons, while mortar detachments will deal with anti-tank targets with smoke or H.E. as a primary task.

Speed in the advance is also essential and the infantry should advance straight on the objective by the shortest route and without pausing to fire. The closer it can follow the tanks on to the objective, the better. Sections and platoons should move in as compact formations as possible with a view to the assault, but deployed sufficiently to avoid presenting too vulnerable a target. In view of the enemy fire which may be drawn by the tanks, the direct line of advance of the tanks should be avoided, if possible.

4. *Co-operation generally.*—In all offensive operations the infantry advance should begin immediately the tanks make such forward movement possible; this applies not only to the initial attack, but during all phases of an operation. The successful advance of the infantry will depend largely on the rapidity with which it takes advantage of every opportunity created by the tanks to get forward, close with the enemy and hold the position. In order to comply with this, junior infantry commanders should not hesitate to cross their starting line before “zero” should the situation demand it.

Successful co-operation between tanks and infantry depends in a high degree upon the establishment of liaison between tank and infantry commanders down to the most junior at the earliest moment in the planning phase and its maintenance throughout the whole period of the attack. When tanks are allotted for the support of an infantry formation or unit, the initial establishment of liaison and its maintenance throughout the operation is the duty of the commander of the tank unit.

The commander of a tank unit requires the following definite orders from the infantry commander whom he is supporting :—

- i. The objective on to which he is responsible for leading the infantry.
- ii. The time at which his unit is required to begin its effect on the enemy.
- iii. The general direction of the tank and infantry attack.
- iv. The supporting fire plan.

A programme of machine gun fire will often be necessary to cover the noise made by the tanks during their move from the assembly area to the starting line.

For the purpose of co-operating with infantry, two simple flag signals are used by tanks :—

- i. Green and white flag.—The opposition is crushed; all is clear for you to come on.
- ii. Red and yellow flag.—The tank has broken down; do not wait for it.

In addition a signal will be arranged, and varied from time to time, to denote “friendly tank coming out of action.”

66. The rifle company in the attack

1. *Preliminary action.*—Having received his orders, the company commander will carry out his reconnaissance, prepare his plan and issue his orders in accordance with the procedure described in Chapter VIII.

2. *Reconnaissance and plan.*—In making his plan, the company commander should consider the following points :—

- i. The intention of the battalion commander.
- ii. The information about the enemy.
- iii. His object and how he can best attain it.
- iv. The ground (*see* Sec. 63, 4).
- v. The flanks; whether they are protected or can be defiladed from hostile fire by skilful use of ground; if unprotected, how he can best dispose his reserve so as to deal rapidly with a possible counter-attack in flank.
- vi. The fire plan.—The covering fire to be afforded by artillery, mortars and machine guns or by his own platoons, and the action of tanks if co-operating.
- vii. The number of forward platoons necessary and their tasks.
- viii. The strength of his reserve and its most probable employment.
- ix. The equipment of the various platoons (whether rifles or light machine guns, grenades or anti-tank rifles, or extra ammunition will be required).
- x. The control of company transport.
- xi. The position of company headquarters.

3. *Distribution.*—A forward rifle company in the attack will be divided into :—

- i. Forward platoons.
- ii. Company reserve.

The guiding principle is to employ the smallest number of forward platoons consistent with the efficient execution of the task; the distribution of the company must be in depth,

so as to retain power of manœuvre. Definite objectives and tasks will be allotted to each forward platoon. The number of platoons to be detailed as forward platoons cannot be laid down.

Platoons in company reserve will be kept in as concentrated a formation as the ground and the enemy's fire will permit.

4. *Methods of attack.*—The details of the company commander's plan will vary according to the orders which he has received, the nature of the attack, the ground and the enemy resistance anticipated. There are many methods of attack, all depending on some combination of the use of ground and the employment of fire and manœuvre.

AGAINST ORGANIZED RESISTANCE

Against organized enemy resistance the attack is likely to be on a timed programme (*see* Sec. 63, 2), particularly in its initial stages. Forward platoons will rely principally on the fire of other arms to cover their movements and will advance direct on their objectives by routes previously selected. In such circumstances the company commander will select for each platoon its objective, forming up place and line of advance, also the line of advance of his headquarters and his reserve.

By a steady advance the forward platoons must strive to keep to the timed programme; should they drop behind, however, or should enemy resistance be encountered not adequately dealt with by the attack, the forward companies will fight their way forward with their own weapons and such supplementary means as are immediately available. In such cases the method of attack will be similar to that described below.

AGAINST UNCO-ORDINATED RESISTANCE

In attacks against unco-ordinated resistance knowledge of enemy dispositions is likely to be vague and companies will rely more on manœuvre and the quick organization of fire support to deal with resistance which is checking the advance.

The attack will move step by step through the enemy defences, a fresh objective being selected and a fresh plan being quickly made after each success. Objectives selected will be those most likely to facilitate the next stage of the advance, such as positions from which an attack can be launched or covering fire developed. These objectives may be attacked frontally or in flank.

The frontal attack is generally the more easily and rapidly organized, particularly when supporting fire is provided by

mortars or artillery. To attack frontally, however, entails an advance from the direction in which the enemy is most prepared to offer resistance and its success will often depend on how nearly the objective may be reached by a covered approach; suitable fire positions on the flanks will also be necessary if the support of small arms fire is required.

A flank attack is most likely to be decisive, and the development of machine gun support can generally be more easily arranged; it will often, however, take longer to stage, and success depends on the suitability of the ground to enable troops to reach their attacking positions and the existence of an unprotected enemy flank.

Often, however, a weak spot in the defence may be discovered and a gap created by the successful action of the leading troops, particularly if the advance is on a wide front; on other occasions the nature of the ground may allow the company commander to find a covered way through the enemy defences. The fullest advantage should be taken of such opportunities and the attack must be pressed with the utmost vigour through the gap, without undue consideration of the objective previously selected (*but see* Field Service Regulations, Vol. II, 1935, Sec. 59, 1). To enable the penetration to be made, it may be necessary for the company commander to arrange for covering fire or smoke to be directed on enemy localities flanking the gap. Such situations may also enable the company to bring fire from the flanks or rear on to enemy localities still resisting, and so assist the advance of other companies.

5. *Frontages.*—The frontages which may be allotted to rifle companies and platoons cannot be made the subject of rules; they depend on the nature of the ground, the method of attack, the morale and armament of the enemy and on special factors such as fog and darkness.

The limiting factor will generally be the ability of each commander to control his unit and on no account should infantry units be so extended that efficient control is endangered.

If company frontages are wide, there should be gaps between platoons rather than that the platoon should be so extended that control by the platoon commander is lost.

Units in the attack are not necessarily helped by being allotted reduced fronts. A narrow front may merely reduce a unit's scope for manœuvre and tend to increase its losses by bunching.

6. *Company in battalion reserve.*—A rifle company in battalion reserve (*see* Sec. 64, 11) will move in a formation which will minimize the risk of casualties and facilitate control by

the company commander. The company, being in reserve, will act under the orders of the battalion commander; but its commander must not hesitate to employ it without further orders to cover an open flank, to stop a counter-attack or in any other emergency, if he has not time to refer to the battalion commander; in any case the battalion commander should be informed at once. It is essential that companies in reserve should keep in touch with the situation, so that they may be ready to act with speed when called upon; information will be sought by the use of liaison personnel, observation posts and patrols and, if necessary, by personal reconnaissance.

7. *Issue of orders.*—The company commander will issue his orders verbally, if possible in view of the ground over which the attack is to pass. Landmarks must be pointed out and the compass bearing of the general direction of the attack given, in order to guard against loss of direction. Watches will be synchronized. Platoon commanders will make notes of the essential points, such as the intention, company objective, starting line and time to cross it, the fire plan, and special light or success signals; these must be checked over.

In the later stages of the attack the issue of further verbal orders will often present difficulties, as enemy fire may prevent the commander from reaching his forward units. These may at times be unable to move, and their assistance in such circumstances must be limited to co-operation in a simple fire plan.

8. *Conduct of the attack.*—In the preliminary stages a rifle company will be moved in as concentrated a formation as the enemy's fire will permit without undue loss. Fire should not be opened unless it is found that progress cannot be made without it. As the company approaches the enemy, it will be necessary to open out gradually, gaps being large between platoons rather than between sections. Finally the time will come to extend the sections; here again gaps should occur between sections rather than between men, who should not be extended beyond the maximum interval at which they can be controlled by their section commander.

The forward platoons will advance on their objective at a steady pace; doubling should be avoided, except during the last rush of the assault or for short distances in crossing ground particularly exposed to enemy fire, so that the men's energies will be conserved. If a fresh objective is to be captured, the company commander may find it advisable to use one or more of his reserve platoons for the purpose, drawing into reserve the forward platoons thus replaced; by such action the vigour of the attack will be maintained with the

minimum loss of time. The forward platoons may on occasions be quite capable of continuing the advance, provided that the requisite fire power is made available, but they may be in such a position that it is not possible to explain to sub-unit commanders the details of the fresh fire plan, the time at which they are to advance, the objectives and other points; sections may be in exposed positions under heavy fire, and it may be difficult or impossible to collect their commanders. In such situations it will generally be advisable to leap-frog reserve platoons through the forward ones.

If, however, the additional impetus for the attack is to be provided by tanks, it will usually be preferable for the forward platoons to continue to lead the advance, as in this case the details of the plan need not have to be communicated to the junior leaders, who will automatically lead their sub-units forward the moment the action of the tanks makes such movement possible.

If the forward platoons are checked, they will take up positions from which they can develop fire power, in order that units elsewhere may advance. They should pin the enemy to his ground with fire and endeavour to create weak points in his defence by working round the flanks of his centres of resistance. The company commander will then use his reserve to push through where the resistance is weakest, and thus outflank those portions of the defence which are holding up the advance; it is only by the quick and intelligent use of these reserves that the measure of surprise, essential for success, can be attained and the enemy prevented from making use of the delay in the attack to improve his defences and to cover gaps which have been created. Should this be impracticable, he will attempt to regain superiority of fire with a view to resuming his own advance later, or of assisting the advance of other troops.

Company commanders should be prepared to make decisions when to continue the attack unaided, and when not to do so, because this would be too costly and a plan supported by the fire resources available in the hands of the battalion commander will be necessary.

9. *Company reserve.*—The company commander will keep a reserve as long as possible; when he has to employ it, he will form a fresh one by drawing into reserve any platoon or platoons that have been replaced as leading platoons, and by collecting men who have become temporarily separated from their own units. If the company should meet with rapid success, and an opportunity presents itself for the effective employment of the battalion reserve, he will inform the battalion commander of the situation, giving him particulars

as regards covered lines of approach and his opinion regarding the most suitable action for the battalion reserve.

67. The rifle platoon and section in the attack

1. *Organization.*—The platoon is the smallest sub-unit that can be divided into inter-dependent bodies each capable of fire or manœuvre. These inter-dependent bodies are the sections.

The sections may be equipped primarily for fire, as light machine gun sections, or for manœuvre, as rifle sections. It must be remembered, however, that this distinction is only comparative and that light machine gun sections must also be prepared for manœuvre, while the rifle section has considerable fire power at its disposal. Sections may also be equipped with grenades.

The proportion of sections in each platoon to be equipped as light machine gun sections will depend on circumstances. If mobility is of paramount importance, it may be desirable for the platoon to consist only of rifle sections; if fire production is of main importance, all sections may be equipped with light machine guns; on other occasions a proportion of sections equipped in each way may be desirable.

2. *Reconnaissance and plan.*—Having received his orders, the platoon commander should be certain that he understands his task and has all the information available regarding the enemy dispositions, the movements of flanking units and the nature of the fire which will cover his advance. He will then decide on his plan and for this he must see as much as he can in the time available of the country over which his platoon will move. This reconnaissance is of the greatest importance and, with efficient organization, should cause little delay. While it is being carried out, the platoon will be completing its preparations for battle and being moved up under cover by the platoon serjeant, while section commanders go forward to the platoon commander to receive orders.

The objective and the general line of advance of each platoon will generally be laid down by the company or even the battalion commander; the main problem confronting the platoon commander will therefore be to decide the disposition of his sections, how they shall be armed (if not decided by the company commander), and how to make the best use of the ground over which his platoon is to advance and at the same time to maintain direction.

3. *Formations.*—The formation adopted should be one that will minimize losses, and enable the platoon commander to maintain personal control and make the best possible use of the

weapons at his disposal. On no account should the platoon become so extended that he cannot control it; the ideal to be aimed at is that sections should be under his voice control, although this will not always be possible.

One forward section will often be sufficient when the ground is open, the enemy weak and little is known about the strength of his defences; a platoon so disposed has great power of manœuvre and can adjust its dispositions to the situation as it develops.

When the platoon front is wide or the country enclosed, it will be necessary to employ two, or possibly in extreme cases three, forward sections; with three sections forward, the platoon commander's power of manœuvre is greatly restricted.

4. *Platoon headquarters.*—The platoon commander will move where he can best control the action of his platoon; before deployment, at the head of his platoon; after deployment, usually with or near his reserve sections; during the assault, once more at the head of his platoon.

5. *Supporting fire.*—The fire to make movement possible in the face of strong opposition is supplied primarily by machine guns, mortars and artillery, particularly in the initial stages of the attack. But local situations will constantly arise which can be dealt with promptly only by the fire of platoon weapons. The platoon commander should then organize the fire of certain sections, using light machine guns, rifles and smoke and H.E. grenades, to provide the covering fire necessary to enable the remainder to continue the advance.

Unless the ground is exceptionally favourable, the supporting fire must be oblique to the line of advance; either the fire will be developed frontally to support an attack coming in from a flank, or the fire units will be pushed out to a flank to support a frontal attack. The platoon commander should arrange for this covering fire in his initial plan and orders, but section commanders will also open covering fire on their own initiative whenever a good opportunity presents itself.

If in the later stages of the attack the fire of light machine gun sections is not required owing to the provision of adequate covering fire from other sources, they should join the rifle sections in the final assault.

6. *Issue of orders.*—The platoon commander will issue his orders verbally. These will include:—

i. All available information about the enemy, and friendly troops operating on the flanks.

- ii. His intention.
- iii. The objective. This will be actually pointed out. Landmarks also will be given to assist in maintaining direction, and attention drawn to obstacles which might interfere with movement. Sketches or oblique photographs if available will be valuable.
- iv. The starting line, time of attack, tasks and distribution of sections.
- v. The equipment and armament of the various sections.
- vi. The nature of the assistance from artillery, machine guns, mortars, tanks and smoke.
- vii. His own position during the attack, and the location of company headquarters.

7. *Action during the attack.*—The action of a forward platoon in the attack is described in Sec. 66, 8. The aim of the platoon commander will be to advance as close as possible to the enemy's position without undue loss, and without having to check the speed of the advance by opening fire. If the advance becomes no longer possible without fire from the platoon weapons, he will continue to push boldly forward by the use of fire, ground and manœuvre. When he has penetrated to close quarters, he will find the enemy occupying a trench or some other cover; the platoon will then assault, the men rushing in with the bayonet led by their platoon and section commanders. The whole area of the objective must now be searched and cleared of the enemy; small enemy detachments may "come to life" again after the first shock of the attack and their resistance must be overcome by the platoon weapons, grenades being valuable if trenches, dug-outs or houses have to be cleared; isolated machine guns which may be discovered in intermediate positions must be put out of action, being stalked by a few men under cover of rifle and light machine gun fire or driven from their positions by rifle grenades. This close fighting will eventually lead to some disorganization and the platoon commander must therefore reorganize his platoon and any other men in its vicinity as quickly as possible.

Should the platoon be definitely held up in its advance, it will be so disposed by the platoon commander that the maximum fire power can be produced. Having done this, the platoon commander should not rest content; he should endeavour to get his men forward whenever such action is possible without excessive casualties. By reconnaissance forward and to the flanks it will often be found that a way exists where none seemed possible.

8. *The section in the attack.*—Details of the action of a section

in the attack, and the duties of its commander, are contained in Infantry Section Leading.

68. Machine guns in the attack *

1. *Tasks.*—The characteristics and general principles of the employment of machine guns are described in Sec. 4; the tasks for which they may be used in the attack are:—

- i. To give close support to forward rifle companies.
- ii. To assist in consolidation and to deal with counter-attacks.
- iii. To provide covering fire for the rifle companies as part of the pre-arranged fire plan.
- iv. To protect the flanks of advancing rifle companies.
- v. To provide a reserve of fire.

The guns on tasks (i) and (ii) are known as "Forward guns," those on tasks (iii) and (iv) as "Supporting guns" and those on task (v) as "Reserve guns."

The proportion of guns which should be employed in each role must depend on the nature of the attack.

2. *Close support.*—On occasions when the ground is suitable, guns may be detailed for the close support of rifle companies to engage with fire centres of enemy resistance not adequately dealt with by the initial fire plan which may be checking the advance. They will also be of value, particularly if provided with some armoured protection, to assist rifle companies fighting their way forward by infiltration or by attacks on successive objectives. It is essential that such guns should act in close co-operation with the rifle company which they are supporting. A covered line of advance should, if possible, be selected, due regard being paid to facilities for close co-operation and reaching commanding positions from which fire can be opened with safety to the forward troops. The advance should be made by bounds. Close support may sometimes necessitate the use of overhead fire, but overhead fire should be avoided whenever possible and will seldom be effective, except when the ground is particularly favourable. When possible therefore, movement should be made to a flank, so that oblique fire may be employed.

3. *Consolidation.*—Guns for consolidation and to deal with counter-attacks may be moved forward by bounds from fire position to fire position, consolidating ground as it is gained by the forward rifle companies, or may be held in reserve, to be sent forward when the final objective has been gained. In the former case guns allotted a consolidation role may find it necessary to act as close support guns.

* Does not apply in its entirety to machine guns in carriers.

4. *Covering fire.*—Guns for the provision of covering fire will have, in co-operation with the artillery, the primary task of neutralizing by fire known enemy posts or areas suspected of concealing hostile troops. They will fire in accordance with a timed programme or their observation of the advance of the rifle companies. In the former case they should be prepared to continue firing even if they or their target are obscured by smoke, mist, dust, etc. This entails certain preparations being made as well as detailed orders being given as to the periods during which fire is to be maintained on particular targets.

The nature of the ground, the importance attached to surprise, the amount of covering fire required and the distance from their allotted fire positions will all affect the time required to reconnoitre and occupy machine gun positions. Reduction of this time is important, and is dependent on forethought and orderly procedure. (See Sec. 39.)

As the attack passes beyond the limit of their range, they may be brought into reserve or may be moved forward to assist in consolidation or to give covering fire for a further advance.

In addition to their primary task the guns should be allotted arcs by the company or platoon commander within which to watch for unexpected developments.

5. *Flank protection.*—Guns for flank protection may be required to occupy their positions before the start of the attack or may be held in reserve ready to move forward to protect a flank created by the penetration of the attack. In the latter case a suitable assembly position will be selected, and the ground will be studied with a view to the selection of a suitable line of advance to likely positions for the production of effective fire.

The opening of fire by these guns will be a matter for the decision of fire unit commanders, and positions should therefore be sufficiently far forward to enable them to see clearly when the fire will be required.

6. *Guns in reserve.*—There will seldom be cases when a surplus of fire power will be available for the support of an attack, and guns should be held in reserve only for some definite purpose. Machine guns act by fire alone, and only assist the attack when in action and actually firing. For the machine gunner the offensive spirit is as important as for the rifleman; his aim must be to have his gun constantly in action, seizing every opportunity to use the fire power at his command to achieve the intention of his commander.

7. *Control of machine guns.*—Having made his reconnaissance, the brigade commander will decide the number of

guns required for the various tasks enumerated in paragraph 1, above. Forward guns will usually be placed under the command of attacking battalions; supporting guns may be placed under the command of rifle battalions, or may be allotted brigade tasks, the decision depending, as a general rule, on whether the detailed fire plan is arranged by the brigade or the battalion; reserve guns may also be kept under brigade control or allotted to rifle battalions, the decision depending on the purpose for which they are being retained in reserve. If such guns are designed for use during the later stages of the attack as forward or supporting guns, they should, as a rule, be allotted to rifle battalions at the outset, as delay will be inevitable if they are kept in brigade reserve.*

The performance of the various machine gun tasks will necessitate a constant interchange of roles between platoons; whenever possible, therefore, machine gun platoons should operate under the orders of their own company commander and should be placed under a rifle company only when it is obvious that their own company will be unable to exercise efficient control.

The *company commander* should keep in close touch with the general situation as well as with the movement of his platoons, so that he can, if necessary, quickly allot fresh tasks as the attack progresses. He should in addition ensure that there is close liaison between his platoon commanders and the rifle companies which they are supporting, notifying the whereabouts of the one to the other as opportunity occurs.

He will control the supply of ammunition, regulating the forward movement of vehicles to platoons and arranging meeting-places for replenishing.

The *platoon commander* will, preferably before giving his orders, if time permits, get into touch with the nearest rifle company commander to make sure that his fire support is in accordance with the plan of attack as finally decided.

When the platoon is moving forward before going into action, its commander should be ahead, keeping touch with the rifle company commander and selecting in advance

* NOTE.—In the case of mixed battalions, the same general principles will apply, except that attacking battalions will normally retain control of the whole of their own machine guns, to which however certain brigade tasks may be allotted in the opening stages. All or part of the machine guns of battalions in reserve may be utilized to provide covering fire for the initial advance. For this purpose they may be kept under brigade control or placed temporarily under the command of an attacking battalion. In either case precautions must be taken to ensure that the personnel of these gun teams are fit, and that equipment and ammunition are available for them to accompany their own units when the latter are due to advance.

suitable positions from which to support the attack, if required. The platoon serjeant will lead the platoon.

When both sections are in action independently, the platoon commander will place himself where he can observe best. Control will normally be maintained by orderly.

8. *Battle procedure.*—The normal procedure for deployment has been described in Chapter VIII. Before accompanying the infantry commander on his reconnaissance, the machine gun commander should give such orders as are possible for the preparation of his command for battle and to save time.

After the reconnaissance with the battalion commander, the machine gun company commander should know the tasks for which his guns are required, the probable number of guns required for each task and the general areas from which they can best be carried out. It is unlikely that time will be available for further reconnaissance before he issues preliminary orders to his platoon commanders, and the selection of areas for gun positions may have to be left very largely to platoon commanders, particularly in enclosed country.

9. *Company commander's orders.*—The company commander's orders will include :—

i. *Information* regarding (a) what is known of the enemy's dispositions and (b) the method of attack, the action of supporting arms, the use of smoke.

ii. *The intention.*

iii. *Method.*—Each platoon will be given its forward rendezvous (if not previously ordered), task or tasks, gun position area and any limitations regarding rates of fire and the number of belts to be fired. In addition, if the move of a platoon during the attack can be foreseen, the line of advance should be given, where possible.

iv. *Administrative.*—Details will include instructions as to dumping ammunition, the position of the ammunition reserve, arrangements for refilling platoon vehicles during the progress of the attack and the control of vehicles.

v. *Intercommunication.*—The location and line of advance of company headquarters will be given, together with details of the distribution of any signal personnel allotted to the company.

It will not always be possible for complete orders to be issued in the first instance; in such cases preliminary orders should be given, to enable platoon commanders to carry out their reconnaissance and make preparations for battle.

10. *Platoon commanders' reconnaissances.*—By foresight it will often be possible for platoon commanders to carry out

a preliminary reconnaissance before the company commander issues his orders; by being allotted areas for reconnaissance they will often be able to confirm or otherwise the suitability of gun position areas provisionally selected by the company commander.

Further reconnaissance will, however, generally be necessary, which will be carried out as soon as the platoon commander has been given his task and has ordered his platoon to a forward rendezvous, under cover near his probable assembly area or gun position.

Caution will be necessary in carrying out these reconnaissances, to avoid disclosing to the enemy that preparations for an attack are in progress.

11. *Platoon commander's orders.*—All ranks will be told what is known of the enemy, the intention of the commander, the objectives of the rifle companies and the nature of the artillery support. Forward platoons should know their line of advance and supporting platoons their targets, the arc within which unexpected targets are to be engaged and any restrictions as to time or rate of firing. All ranks should be informed of any subsequent role that has been allotted.

12. *Security.*—Platoons are at all times responsible for their own security. To economize men, positions selected should, whenever the tasks permit, be where the dispositions of neighbouring rifle platoons provide at any rate a measure of protection.

13. *The machine gun section.*—The section commander is responsible for :—

i. Reconnaissance and selection of gun positions.

ii. Fire control.

iii. Observation of fire.

Both in the movement forward and in the occupation of fire positions particular attention must be paid to concealment and the use of ground.

The commander of a detached section operating independently will act as laid down for the platoon commander in the preceding paragraphs.

In the end the effective employment of machine guns depends on the fire unit commanders realizing the vital needs of the situation and acting accordingly. By systematic observation of the progress of the attack and of the enemy they must be ready to seize opportunities whenever the enemy presents a vulnerable target, or to apply their fire to assist the attackers when they are in the greatest need of support. The guns fire for limited periods only, and the effective selection

of targets will only be made if the fire unit commanders understand thoroughly the tactics of the rifle companies which they are supporting and are watching the course of the action with alertness and intelligence.

69. Mortars in the attack

1. *Tasks.*—The characteristics and general principles of the employment of mortars are described in Sec. 5. The normal mortar fire unit in the attack is a mortar detachment with one mortar. The tasks for which mortars may be used in the attack are :—

i. *Quick support.*—To give quick support to rifle companies by neutralizing enemy opposition with fire or blinding it with smoke. This is their primary role.

ii. *Reserve.*—To be kept in reserve for later stages of the attack.

iii. *Consolidation.*—To assist in repelling enemy counter-attacks, particularly during the early stages of consolidation.

iv. *Covering fire.*—Mortars, particularly of reserve battalions, may also on occasion be used in the initial fire plan, especially against located targets.

2. *Quick support.*—During the progress of the advance enemy opposition will often be encountered which has not been dealt with by the initial fire plan; such opposition may be an enemy machine gun post defiladed from the front. It is to deal with such opposition that mortars for quick support will be provided. Once an attack has been definitely stopped, a fresh fire plan and generally fresh troops are required to start it again. The first principle, therefore, is that the mortars must be well forward and the fire on the target immediate, so that the momentum of the attack may be maintained.

The second principle is that, since mortars are heavy, delay is certain to occur if they must be manhandled for any considerable distance from their vehicles; consequently the detachment commander must be given the earliest opportunity of learning the probable tasks for his detachment so that he may reconnoitre for fire positions as close as practicable to places which can be reached by the vehicles.

Mortars for quick support will be normally under the command of forward rifle company or even platoon commanders, and will move forward in close contact with company headquarters. Movements should be by bounds from position to position.

Owing to the limited amount of ammunition carried in the detachment transport, mortars should not be employed on

tasks which can be carried out satisfactorily by rifles, rifle grenades, machine guns or artillery. Features of any size, woods, crest lines or large groups of buildings are not suitable targets for H.E. mortar fire, which is decisively effective only in neutralizing such targets as located machine guns or destroying an enemy in a small defile such as a sunken road or narrow exit from a village or wood. A detachment can, however, under favourable conditions, lay an effective smoke screen.

3. *Consolidation.*—During the early stages of consolidation and before a co-ordinated defence (see Sec. 63) has been organized, the fire of mortars will be of value to break up enemy counter-attacks. Mortars previously employed for quick support will carry out this role when the company to which they are attached is consolidating. Mortars held in reserve may also be sent forward on the capture of an objective.

4. *Reserve.*—When the initial attack is made under cover of a programme of supporting fire, the reserve companies exploiting the success gained and fighting without pre-arranged support will often require the assistance of mortars even more than the forward companies. Mortars may be held in reserve for this purpose or for consolidation.

5. *Covering fire.*—The decision as to whether any mortars should be used in the initial fire plan depends on whether appropriate targets have been definitely located. When they are so used, ammunition should be dumped, so that the weapon may be ready to advance with its first echelon complete.

70. Anti-tank weapons in the attack

1. *General.*—The possibility of counter-attack by enemy tanks must be considered throughout all the various phases of the attack, and steps taken to guard against it. Attacking troops will often be moving over ground where no protection is afforded to them by anti-tank obstacles. In such cases it is essential that the fire of anti-tank weapons should be immediately available when required.

During the period immediately following the capture of an objective the infantry is most vulnerable to a counter-attack by tanks. Troops on the objective will be reorganizing and may not be under cover, while the reserves will be moving forward across the open.

The anti-tank weapons must be disposed so as to prevent interference by enemy tanks with the attacking troops, particularly during this period. The distribution of anti-tank weapons will depend on the amount of anti-tank protection provided by the ground, and the probable lines of action of

enemy tanks must be studied, and the anti-tank weapons suitably disposed to deal with them.

2. *Anti-tank guns.*—As the attack progresses, the anti-tank guns will be moved forward in support, advancing by bounds from position to position, and organized in depth. As a rule the guns in the forward area will be controlled by their platoon commanders under the general direction of the officer commanding the forward battalion, who will indicate the direction from which he expects attack.

A proportion of guns may also be necessary for the protection of reserves and headquarters.

When anti-tank guns are allotted to a brigade, many situations will be better met by retaining the greater part of the company under brigade control, a greater economy of weapons being thus achieved. There must be no automatic distribution of anti-tank platoons to rifle battalions irrespective of the situation and the ground.*

3. *Anti-tank rifles.*—The weight of the anti-tank rifle compels careful consideration as to whether forward rifle companies should carry them into the attack.

Every effort should be made to protect these companies against tank counter-attack by independent means so that their own freedom of manœuvre is not restricted. This protection may be achieved either by the higher commander detailing anti-tank guns for the purpose or by the battalion commander arranging a plan of anti-tank protection by centralizing control of his anti-tank resources, or a combination of both.

In any event the battalion commander must arrange for anti-tank protection immediately his leading troops have captured their objective, if necessary by sending forward anti-tank rifles with reserves for consolidation. He must further arrange for the anti-tank protection of his rear elements (including his transport) and for that of reserves moving up.

71. Action on gaining the objective

1. *General remarks.*—When the objective has been gained, commanders will at once go forward to supervise the further measures to be taken. Their action will depend on the intention of their superior commander. On this basis they

* In a brigade of mixed battalions a brigade anti-tank officer will be appointed, and according to the ground, a proportion of the anti-tank guns may be brigaded for the protection of the rearward areas or given brigade tasks for the support of a battalion other than that to which they belong.

must balance the claims of consolidation and exploitation, which may be conflicting. Whatever the decision, it is of the utmost importance that touch should be maintained with the enemy and that information regarding the enemy's action should be sent back as quickly as possible. Fighting patrols should be pushed forward whenever possible, if the enemy is not in close contact.

2. *Exploitation.*—(See Field Service Regulations, Vol. II, 1935, Sec. 59, 1.)—The proper exploitation of a success depends mainly on the leadership of the subordinate commanders. When a body of troops has reached the objective allotted to it, it is apt to suffer from a reaction, to consider that its part in that particular attack is over for the time being, and to become inactive. Leadership and energy are required more than ever from subordinate commanders at this stage. There is much to be done.

The first action should be to push out patrols to keep touch with the enemy and to ascertain the situation in front and to the flanks. There is often a period after a successful attack when ground beyond the allotted objective can be occupied with little or no resistance. Whether or not a subordinate commander should push forward beyond the line given him as his final objective will depend on the instructions which he has received, his knowledge of the superior commander's intentions, the situation to his right and left and his tactical judgment as to the value of the ground in front. Generally speaking, a bold decision should be taken, unless it will lead to dangerous isolation. In any event information of the opportunity and of his action should be sent back at once to the next high commander.

3. *Consolidation.*—(See Field Service Regulations, Vol. II, 1935, Sec. 59, 2.)—Consolidation has as its purpose to secure the objectives which have been reached, or other important localities which have been occupied, against counter-attack and as a base for further advance. The process includes the organization of the position for defence; the reorganization of the troops; the replenishment of ammunition, etc.; the establishment of communication both to the rear and to the flanks; provision for observation and information; arrangements for supporting a further advance.

The method of consolidation and the troops employed will vary according to the nature of the attack. In attacks with a limited objective or where fresh troops are employed to capture successive objectives, initial consolidation may be carried out by the assaulting troops; on other occasions the duty of consolidation should not be allowed to interfere with

the progress of the advance, and, when assaulting troops pass on to further objectives, other troops may be required for the consolidation of intermediate objectives. If the ground is suitable, this task may often be carried out by machine guns (*see* Sec. 68, 3). Anti-tank weapons should also be sent forward at the earliest possible moment to assist in the defence.

The general line of consolidation and localities to be made secure will often have been selected from the map and may require revision; battalion and company commanders will be active in seeing that the best defensive arrangements are made for the security of the ground won. Consolidation will be in depth in accordance with the principles of defence laid down in Chapter V, and the concealment of dispositions will be important.

As newly captured positions will often be liable to heavy shelling by the enemy, the thinning out of the troops is of the first importance, all those not required to hold the ground being drawn into reserve to rest and reorganize. The number of riflemen employed will be reduced to a minimum, so that they may be retained in reserve for a further advance or to meet an enemy counter-attack.

Arrangements should be made before the attack for the provision of tools for consolidation. The method employed will depend on such circumstances as the state of the ground and the existence of covered approaches. In favourable conditions the tools may be delivered forward in their vehicles; on other occasions special carrying parties will be necessary; while in the case of a deliberate attack or when the infantry is occupying ground captured by another arm, tools may be carried forward by the reserve platoons of the forward companies.

72. Raids

1. The object of raids and the occasions on which they are carried out are described in Field Service Regulations, Vol. II, 1935, Sec. 85, 4.

2. To have a good chance of success, raids should be planned in great detail. They should also be rehearsed whenever possible.

No definite rules can be laid down for the execution of raids, since their purpose and the local conditions vary widely. Surprise is essential to their success. Artillery co-operation, if required, will usually take the form of a short, sharp bombardment which, as the assault is made, will lift and form a protective barrage in front and on the flanks of the raiding party. Machine guns should also co-operate by sweeping

communication trenches and lines of enemy approach to the locality raided. On occasions surprise may be attained by carrying out a raid silently, no support from artillery or machine guns being given in the initial stage.

The plan should include arrangements for the withdrawal of the raiding party on completion of its task. The whole operation should be carried out in accordance with a pre-arranged time-table; a signal for withdrawal may be necessary in addition.

The infantry which has remained in position (which should be reduced to a minimum) will cover the withdrawal, assisted by the artillery.

3. The troops taking part in a raid should wear no badges and carry no papers by which they might be identified should they fall into the hands of the enemy.

CHAPTER XII

DEFENCE

73. General considerations

1. *General.*—The general principles governing the selection and organization of a defensive position, the conduct of the defence and the methods whereby the co-operation of all arms are achieved are laid down in Field Service Regulations, Vol. II, 1935, Chapter VII. These principles should be studied in conjunction with the following paragraphs, which deal in detail with the action of infantry in defence. It should not be overlooked that successful defence will depend on the co-operation of all arms, and infantry should fully understand the action taken by arms of the service other than its own.

2. *Principles.*—The guiding principles for defence may be summarized as follows :—

i. *Fire.*—The fire of all weapons must be organized to stop the enemy, and the plan of defence should be made in terms of fire rather than of men. Fire is the predominant factor in modern war. In attack superiority of fire is essential to success; conversely, the aim of the defence should be to retain the power to use its weapons effectively. If sufficient time has been gained to enable the position to be well organized, the enemy will be forced to distribute his fire instead of concentrating it. Moreover, if the defences have been strengthened by wire, the enemy's difficulties will be much increased.

ii. *Surprise.*—Surprise is as important in defence as in attack. The defence depends largely on concealment to effect surprise; the requirements, however, for concealment will sometimes conflict with those for observation and the construction of defences. The initiative rests with the attacker, but he requires observation to turn it to good account; the defender can more easily conceal his dispositions and intentions because movement is less essential to the defence than to the attack. The organization of the fire plan should not be prematurely disclosed, and the attackers should be induced to advance into areas in which they may be caught unawares by fire; they will thus be surprised, and opportunity for the delivery of counter-attacks may then be created.

In mobile operations time and resources may be insufficient to enable elaborate defences to be organized in depth. Under such conditions concealment from air and ground observation and protection against tanks are of great importance. So long as infantry remains unshaken by artillery fire or tanks, it can, given good visibility, repulse an attack with its own weapons. The concealment of machine gun positions is of particular importance.

iii. *Depth.*—Depth is essential to localize the effects of a successful initial attack, and to prevent its development, since, if the enemy does penetrate the forward defences, he will still find localities on his flanks. The extent to which a battalion will be distributed in depth will depend on the troops available in comparison with their task, the facilities for defence afforded by the ground, the armament and tactics of the enemy and the length of time during which the position is to be held. If the enemy is known to be weak in supporting arms, some depth may be sacrificed to increase the fire in front of the foremost defences.

iv. *Control.*—The defender should be prepared to act quickly as soon as the attacker has disclosed his intention. Control is therefore important. Should the enemy succeed in penetrating the forward defences, commanders with reserves should decide whether to use them defensively to check the enemy or offensively for counter-attack. (See Sec. 74, 11.)

v. *Information.*—Reconnaissance is as important in the defence as in the attack. Active patrolling should be carried out, and the enemy kept under constant observation by forward infantry posts and intelligence sections. By the piecing together of small items of information which in themselves may appear unimportant, the enemy's intentions may often be deduced. All information collected should therefore be reported at once to the next higher headquarters.

vi. *Determination.*—All ranks should understand that the troops allotted to the defence of a post or locality are responsible for holding it at all costs, and for inflicting the greatest possible loss upon the enemy.

All ranks should realize that it is a disgrace to lay down their arms in the field. If ammunition is exhausted, recourse should be had to a final effort with the bayonet.

Similarly, no body of troops is justified in withdrawing because it believes itself outflanked or because it sees its neighbours falling back; alternative positions, consistent with the task allotted, may however be occupied.

3. *The organization of a defensive position.*—A defensive position will consist of a belt of defended localities arranged in depth and affording each other mutual support. The belt

of foremost defended localities becomes the front edge of the defended system and the defence is built up in depth in rear of it.

In front of the line of foremost defended localities is a co-ordinated belt of fire of all arms to break up the enemy assault; and behind this, fire is organized in depth to stop any of the enemy who may succeed in penetrating the foremost belt, until they can be captured or driven from the defences. The organized fire of the defence is known as the fire plan.

In fog or darkness, adequate warning of an enemy attack is essential if the defensive fire of the longer ranged weapons is to be opened before the leading elements of the enemy reach the foremost localities; infantry patrolling will therefore be constant and directed especially towards detecting any movements or indications of impending attacks; arrangements must include the means of communicating the warning to supporting fire units.

The defended positions will be strengthened by obstacles and entrenchments to the fullest extent possible in the time available. The early erection of a wire obstacle is of the greatest importance and in itself will preclude the possibility of a surprise attack. (See also Sec. 74, 8, v.)

4. *Infantry in defence.*—The fire power of infantry is the real backbone of the defence; its effectiveness depends largely on concealment, surprise and the use of ground and obstacles. In the occupation of a defensive position the infantry commander must consider, in conjunction with the fire of other arms, the siting of machine guns, light machine guns, anti-tank weapons, mortars, defended localities held by riflemen and reserves for counter-attack.

5. *Outposts.*—Outposts will be required to cover the preparation of a defensive position, to provide protection during its subsequent occupation or to deceive the enemy as to the position held. Clear and definite orders should be given to bodies of troops in advance of a defensive position, as to their role and time and method of withdrawal. Their strength and the degree of resistance to be offered by them will vary in accordance with the plan, the ground and the distance apart of the opposing forces.

Normally the action of the outposts will be co-ordinated by the brigade or higher commander, but in the absence of other orders all commanders down to the most junior are responsible for local protection. Even if outposts are provided by a separate body of troops, units and sub-units will not be altogether relieved of protective duties and will in any case keep in touch with the situation on their front by means of liaison personnel and patrols.

The task of outposts may be reconnaissance only, to guard against surprise, or may include some degree of resistance. In the latter case their action may be similar to that of a rear guard (see Sec. 60), and the task may on occasions be undertaken by machine guns or alternatively a screen of fighting patrols.

74. The battalion in the defence

1. *General.*—As a general rule, a forward battalion commander will be allotted the area which he is to defend, and informed as to the ground which he must secure by his dispositions; the latter ground will be defined by his superior commander giving a general line or naming particular tactical features which are essential to his plan of defence.

Orders will be necessarily less detailed when a battalion has to assume the defensive at short notice. The main principles underlying the action of the battalion commander will be identical in either case, but his detailed action will depend on the time available to reconnoitre and organize his area.

2. *Orders from the superior commander.*—The battalion commander should receive all available information of the enemy, and of the dispositions and movements of friendly troops; he should also clearly understand the intention of the superior commander. In addition he will require information on the following points:—

i. The sector allotted to his battalion. The line of foremost localities to be held will be indicated generally, or at least points of junction with adjacent units on the foremost line; dividing lines between sectors will also be indicated by easily-recognizable features and will be carried from in front of the foremost point of the defences back to the rear of the position.

ii. The time by which the position is to be occupied.

iii. Whether outposts to cover the occupation of the position are to be provided by sector commanders or by other troops, the outpost position to be held and the degree of resistance to be offered (Sec. 73, 5).

iv. The allotment of machine guns and anti-tank guns to sectors, and whether they will be disposed under orders of sector commanders or in accordance with a brigade plan (see Sec. 75, 4).

v. If machine guns under his command are to take part in harassing or counter-preparation fire (see Sec. 75, 2).

vi. What artillery covering fire he may expect and the designation of the artillery unit supporting him. It is essential that he should be placed in personal touch with the commander of this unit as early as possible (see Sec. 73).

- vii. The scheme of anti-tank defence.
- viii. The policy with regard to digging (Sec. 74, 8). The allotment of additional tools, wire, etc., and details of any assistance from engineer units.
- ix. The position of brigade headquarters and any necessary instructions with regard to light signals or intercommunication generally.

3. *Preliminary action.*—Details of the procedure for the deployment of the battalion, reconnaissance, formation of the plan and issue of orders are contained in Chapter VIII.

4. *Reconnaissance for defence.*—In making his reconnaissance for the occupation of a defensive position, the battalion commander must consider how best he may employ the fire resources at his disposal for the fulfilment of his task.

In considering his dispositions, it is advisable for a battalion commander to think in terms of platoons and their tasks; this method will enable him to allot areas and give tasks to companies both equitably and economically.

He should study the problem from the enemy's point of view in connection with his own proposed dispositions, bearing in mind the following points:—

- i. The existence of concealed approaches which the enemy may use, and what ground it is essential to hold in order to sweep them effectively with fire.
- ii. Lines suitable for enemy tank attack.
- iii. Areas suitable for the co-operation of all arms in the attack.
- iv. Likely targets for enemy gas bombardment.

The need for observation, particularly by artillery and machine gunners, will often demand that the foremost localities should be sufficiently in advance of observation areas to ensure that observation is not blinded as a result of a local success by the enemy. On the other hand, concealment is the primary consideration of the infantry of the defence. These two requirements may often be conflicting, as protection of the high ground may entail the infantry holding exposed positions on the forward slope. The ideal is that minor slopes and accidents of the ground should protect the infantry, while commanding ground in the rear gives the required observation. If such conditions do not obtain, the commander must decide between the comparative requirements of observation and concealment in each case.

If a reverse slope position is adopted, arrangements must be made to prevent the enemy from establishing himself on the crest, or the advantages of the position will be nullified. Machine guns should be sited to sweep the crest and, if possible,

the far side of the slope, from flanking positions where available. The front trenches and wire should be as near as possible to the crest line, having in view the necessity of avoiding ground observation by the enemy. In addition it may be necessary for the leading infantry to secure observation of the front by means of outposts, patrols or listening posts. If an enemy tank attack is possible, the position should be sited to allow for an adequate field of fire for the anti-tank weapons.

In wooded, close or broken country the ground must be examined to ensure that no area is left unwatched where the enemy could penetrate through the defences or outflank them. The infantry will often be forced to deploy to a greater extent than would be necessary in open country, and units should in consequence be allotted narrower fronts.

Ground should, therefore, be studied in order to find:—

- i. Facilities for observation, so that the enemy cannot approach unseen.
- ii. Positions difficult for the enemy to locate from the ground or the air.
- iii. Covered approaches in rear of the position which will facilitate counter-attack and supply.
- iv. Areas defended by natural anti-tank obstacles.

5. *Battalion commander's plan.*—As a result of his reconnaissance, the battalion commander will be in a position to make his plan of defence. The following points should be considered:—

- i. What is known of the enemy and of his most probable line of attack.
- ii. The situation on the flanks and to what extent it will affect the battalion dispositions.
- iii. The system of outposts to cover the occupation and preparation of the position (see Sec. 73, 5) and the limits, if any, as regards patrolling.
- iv. The general dispositions of the battalion as between forward troops and battalion reserve. The localities to be held, their allotment to companies and inter-company boundaries (see paragraph 7, below).
- v. The fire plan. As regards machine guns this should include distribution and tasks. In the case of the artillery the detail will depend on the degree of decentralization of artillery command.

vi. The composition and location of his reserve. The probable direction and objectives of any counter-attacks likely to be delivered and the fire support to be provided.

- vii. Anti-tank defence (see Sec. 79).

viii. The digging policy, priority of work and allotment of additional tools (*see* Sec. 74, 8). Any special work to be carried out by engineers and the allotment of working parties from the reserve.

ix. Orders as to ammunition supply and dumping of machine gun ammunition. Any restrictions as to fire on counter-preparation or defensive fire tasks.

x. Medical arrangements (*see* Sec. 48).

xi. Administrative arrangements, *e.g.*, greatcoats, food, water, transport, etc. (*see* Sec. 48).

xii. The position of battalion headquarters and the system of intercommunication, including methods of liaison with flanking units, artillery, etc. Light signals to be employed.

6. *Frontages*.—The frontage which can be held by a battalion depends mainly on the facilities offered by the ground for the development of fire, the strength, morale and efficiency of the unit, the armament and characteristics of the enemy, the importance of the position and the length of time it is to be held. If the position has to be held at night, the danger of enemy penetration in the dark between localities will determine the frontage allotted to a unit in defence.

In the case of outpost and rear guard dispositions the frontage will often be proportionately wider and depth must be sacrificed.

Whenever possible, the fire power of machine guns will be used to reduce the calls made on rifle companies. By day a proportion of machine guns may be sited to hold portions of the front; and in open country they may require little assistance beyond that afforded by patrols and a few protective posts to block hidden approaches. It must be borne in mind, however, that the attacker is likely to make considerable use of darkness, mist or smoke, to conceal his movements and to blind the observation of the defence; machine guns and light machine guns will be laid on fixed lines, but this will be of small value unless warning of the enemy advance is received. In such circumstances it will be necessary to patrol widely in order to obtain early information of any forward movement of the enemy and to strengthen the forward defences by holding intermediate localities.

7. *Organization of position*.—The rifle companies will be divided into forward and reserve companies. The forward companies, allotted to the immediate defence of the position, will be distributed according to the accidents of the ground in such a way that they can best develop the fire of their weapons. This will usually result in the occupation of a

chain of localities which mutually support each other by frontal, flanking or enfilade fire and are covered by the fire of the longer range weapons echeloned behind them.

Provided that a good view of the ground over which the enemy has to advance can be obtained by the artillery and machine guns, the weapons of the forward companies need not necessarily have a long field of fire. Surprise is most important; and both surprise and security from enemy fire may sometimes be obtained by holding reverse slope positions. On the other hand, when the enemy's artillery is known to be weak, a long field of fire is of advantage to make the best use of the fire of rifles and light machine guns.

The defended localities will be held by platoons or companies with their section posts so disposed as to afford each other mutual support. The forward companies will be disposed in depth, finding their own reserves, and the siting of the defended localities must be so co-ordinated with the machine gun fire plan that there will be a continuous belt of small arms fire in front of the position.

The ground between the different localities should be covered by small arms fire. In darkness or fog, however, it will be impossible to ensure that this fire is properly directed, except by weapons able to fire on fixed lines, as troops which are closely engaged have a tendency to fire direct to their front. It may be necessary to prepare intermediate localities for occupation to meet such conditions; alternative positions must also be selected for occupation in the event of a gas bombardment.

Fire tasks will be allotted to weapons in accordance with their capabilities, the most important tasks to the machine guns with their ability to maintain sustained fire on fixed lines, those next in importance to light machine guns, and the remaining tasks to rifles. Fire tasks must also be allotted to anti-tank weapons.

The reserves of the forward companies will be distributed to give depth to the defence, to ensure protection for the flanks of the forward localities and in some cases to counter-attack.

Reserve companies may be allotted one or more of the following three main roles:—

- i. To hold prepared positions to stop the enemy, *i.e.* to give depth to the defence.
- ii. To move to positions where they can assist by fire localities which are still holding out.
- iii. To deliver a counter-attack in order to recapture ground lost (*see* Sec. 74, 11).

Defensive positions will be prepared for reserve companies, and will usually be occupied, especially if the localities are of

importance and there would otherwise be danger of their being overrun. On the other hand, in certain situations when the ground favours the movement of reserves and there is strong machine gun defence in depth, a reserve company may be kept concentrated and mobile, available at short notice either to counter-attack or to occupy prepared positions.

8. Construction of defences.—

i. One of the main advantages of the defender over the attacker is that the former is able to use his weapons from behind cover, while the latter has to move exposed to the fire of those weapons. The defender should therefore make full use of natural cover both from fire and from view, and of artificial cover provided by field defences and the use of camouflage. In addition, to exploit his advantage to the utmost, he should employ natural and artificial obstacles to hold the attacker exposed to his fire.

ii. In the defence earthworks will be used with the following objects:—

(a) To force the enemy to employ increased fire support before he can attack with hopes of success.

(b) To economize troops of the defence and to save casualties.

(c) To facilitate command, control and administration.

iii. Infantry is responsible for siting, organizing and constructing its own defences, including wire entanglements. When required, materials and minor technical assistance will be supplied by the engineers; on such occasions the engineers work under command or in support of the infantry commander. Companies have their own tools, but additional stores and tools (particularly cutting tools) will generally be required, and these requirements should be anticipated by brigade and battalion commanders so that they will be available for companies requiring them at short notice. Full details of the organization and construction of defences are contained in the Manual of Field Engineering, Vol. I (All Arms).

iv. In suitable country machine gun emplacements and weapon pits within section posts may sometimes be concealed for short periods from both ground and air observation, but, when the weapon pits have been occupied for a short time, or are joined up into section posts and platoon localities, the concealment of the *trenches* from the air becomes impossible, and concealment of the *dispositions* of the garrison can be obtained only by a multiplicity of trenches.

The decision to dig beyond the weapon pit stage is therefore a matter of policy, depending largely on the estimated time for which the position is to be held and the suitability of the ground for concealment.

v. If a temporary defence only is contemplated, digging may be limited to the construction of concealed weapon pits and the improvement of natural cover. Concealment will be of paramount importance, and in siting weapon pits with this end in view it will rarely be possible to select the best fire positions.

vi. When a position is to be held for 48 hours or more, it will usually be expedient to confront the enemy with an extensive trench system and to provide covered communication between forward companies and to the rear, and alternative positions for the garrison. The enemy will then be less able to concentrate on known fire positions, and the occupation of alternative positions (*e.g.* in the event of gas bombardment) and of intermediate positions in fog, mist or darkness will be made easier.

There will be danger to the defence if trenches stand out as isolated entities, as the enemy will then be able to deduce not only the location but also the strength of the garrison. This can best be overcome by rapid and extensive digging between platoon and company localities in both the forward and reserve areas, though cover from ground observation will still be attempted.

In siting the initial weapon pits for the garrison and the intermediate posts (when extensive digging is intended) the ultimate trace of the trench system should be considered. The more the position can be traced out before digging begins, the greater will be the economy in time and labour.

vii. The programme of development, when digging is to proceed beyond the weapon pit stage, will thus often be on the following lines:—

(a) Digging of weapon pits for the garrison and erection of wire, after considering the final trace of the system.

(b) Digging of intermediate weapon pits. (This may be carried out concurrently with (a) if reserves are available for work.)

(c) Joining up weapon pits throughout the system, and provision of communication from front to rear, by means of a "crawl" trench 18 inches deep. In tracing these trenches it must be remembered that they will ultimately be developed into fire and communication trenches.

(d) Deepening all trenches to three feet.

(e) Development to full width and depth can proceed eventually with greater ease and security.

On occasions (*e.g.* when there is ample time before the enemy is likely to gain contact) it will be preferable to begin by digging the crawl trench throughout the system. This

method will be particularly valuable in preparing a line on to which troops are to withdraw, as it ensures that they will stop on a co-ordinated line.

Superior commanders will indicate the stages by which the position is to be strengthened, laying down a priority of work, and allotting extra labour and tools where necessary.

viii. Speed in the initial development of field defences is of such vital importance that commanders should know the time the work involved will take to carry out. Work should be organized rapidly. Rapid calculations and lay-outs following the proper trace of fire and communication trenches are essential. (See Appendices III and IV.) Throughout the development of field defences the concealment of machine gun and anti-tank gun positions is of the first importance.

ix. Appendix IV gives data for the calculation of work on the hasty preparation of field defences, and Diagrams I to V of Appendix IV give examples of the application of the above principles.

9. *Obstacles*.—The fullest use should be made of obstacles, both natural and artificial. The sooner some wire can be put up and the quicker it can be extended, the more difficult will be the task of the attacker, the more secure will be the infantry of the defence and the greater the economies which can be made in personnel. Obstacles may be used in two ways, as *protective obstacles* to check an attack under the fire of the defence so that it may be stopped by fire, or as *tactical obstacles* to restrict the freedom of manœuvre of an attack and to herd it into pockets, when it can be effectively dealt with by the fire of the defence. In some cases obstacles will serve both these purposes.

In the co-ordination of obstacles with the fire plan the following factors must be considered:—

- i. The obstacle should be under the effective fire of the defence.
- ii. Obstacles produce their maximum effect when they are encountered unexpectedly by the enemy, who should therefore be prevented from reconnoitring them.
- iii. The siting of obstacles should not afford obvious clues to the positions which they protect.
- iv. The necessary gaps should be left for the passage of patrols, covering troops, etc.

CONDUCT OF THE DEFENSIVE BATTLE

10. *General remarks*.—The means of conducting the defensive battle are described in Field Service Regulations, Vol. II, 1935, Sec. 69.

Constant vigilance should be maintained by the employment of patrols, by the alertness of sentries and by the use of the intelligence section to ensure that the earliest possible information is received from which the action of the enemy may be ascertained or deduced.

Throughout the action the battalion commander should keep in the closest touch with the other arms, especially the artillery supporting him. He will keep the infantry brigade commander and adjoining unit commanders constantly supplied with information, and will maintain touch, by every available means, with the situation on his flanks.

11. *Counter-attacks*.—If portions of the enemy attacking force succeed in penetrating the defender's position, the nearest commander with reserves at his disposal is faced with the problem of whether to use those reserves defensively, to check and localize the enemy's success, or offensively, to counter-attack the enemy. The decision is a difficult one and cannot be made the subject of rules. To counter-attack as a matter of routine whenever ground is lost is to court unnecessary and useless casualties. Counter-attacks should be made only with a definite and useful object, *e.g.* to recover ground or to close a gap when the system of defence in that part of the field is in peril, or to exploit an opportunity of dealing the attacker a blow with good prospect of success. Surprise is also the chief factor in the success of a counter-attack.

Counter-attacks are classed as immediate or deliberate according to their purpose and method of delivery.

The immediate counter-attack by a reserve platoon or company has as its object to check the enemy and to stabilize the local situation. If these objects are accomplished, it is immaterial whether or not the position originally held is recaptured. It should be launched during the period of temporary confusion and disorganization which occurs when the attacking troops have penetrated the position and gained an objective, but have not had time to settle down or to become familiar with their new surroundings. This period with good troops is short; so that the immediate counter-attack should be delivered without delay by the local commander. It will have only the fire support immediately available—pre-arranged if possible; will have a limited objective (*e.g.* to drive the enemy from some tactical feature which he has gained); and will, whenever possible, have been reconnoitred, planned and even rehearsed beforehand. In these conditions, if boldly and rapidly made—from an unexpected direction if possible—it will often have an easy success. Troops in reserve should study carefully any ground

over which they are likely to counter-attack, and all troops will do their utmost to assist by fire any counter-attack taking place in their vicinity. If there is a possibility of ground over which a counter-attack has been planned being contaminated with gas, an alternative line of attack should be selected.

Once the enemy has been able to reorganize, the moment for an immediate counter-attack has passed and a deliberate counter-attack will be necessary if the ground lost is to be recaptured. The counter-attack will then be carried out in accordance with the principles laid down in Chapter XI.

75. Machine guns in the defence

1. *General.*—The machine gun is the most powerful weapon of the defence; its characteristics have been described in Sec. 4. Machine guns are able to produce a considerable volume of sustained and accurate fire at ranges up to 2,000 yards; they are able to maintain this fire although the target may be obscured by darkness, fog or smoke; their fire is most effective when used in enfilade. When machine guns are in action, few rifles are available within the machine gun section for local defence, but, as the positions occupied will often be unsuitable for defence against a frontal attack, it is usually essential for local protection to be afforded by the dispositions of other troops.

In defence machine guns should be organized in depth and should be sited to sweep with enfilade or oblique fire the probable lines of enemy approach so as to provide as far as possible a continuous belt of fire across the front of the position. Since all light machine guns are provided with tripods and are capable of firing on fixed lines, the machine gun fire plan should be closely co-ordinated with that of the light machine guns in the rifle companies holding the position. As the number of machine guns is limited, it may be necessary to restrict their task to strengthening the defence of the more vital portions of the position and to rely on the light machine guns and rifles of the rifle companies to complete the belt of fire. Concealment is of the utmost importance and guns should, when possible, be sited behind some feature giving concealment from the front; it must be realized that to obtain this concealment may involve a reduction in the arc of fire obtainable.

Against attacks made under cover of darkness or smoke machine guns can still maintain accurate fire on fixed lines, provided that preparations have been made in daylight. The duration of machine gun fire is, however, limited by ammunition supply and in these conditions machine gunners

must rely on signals and information from the front and the noise of battle to know when fire must be opened and for how long it must be continued.

2. *Distribution and tasks.*—Machine guns will normally be divided according to their tasks into forward, supporting and reserve guns. The siting and handling of each category differ and are given in detail below:—

i. *Forward guns* will have the task of stopping the advance of the enemy by defensive fire in front of the line of foremost defended localities and should be sited so as to sweep with enfilade or oblique fire the probable lines of enemy approach.

They will be given arcs of fire within which targets may be engaged and fixed lines on which they will fire when their target is obscured. The fire on fixed lines should fall as close to the foremost defended posts as considerations of safety and other requirements permit. The arcs of fire should be decided early before the final gun positions can be selected; temporary fixed lines will be given as soon as the guns come into position, and adjusted later when the actual positions of the forward rifle posts have been decided. If it should then be found that the fixed line does not fall within the arc of fire first selected, the arc will be adjusted, and it may also be necessary to alter the gun position. Forward guns will normally be employed by sections, and efforts should be made to site them in direct fire positions defiladed both from fire and observation from the front. Sub-unit commanders will use their discretion as to engaging exceptionally vulnerable targets appearing outside their arc, but targets within their arc will always be given prior attention. Forward guns will not be allotted counter-preparation or harassing fire tasks.

ii. *Supporting guns* will be sited in depth with the main object of checking by flanking or oblique fire any hostile penetration of the defensive system. They will usually be grouped with the special object of preventing any hostile attack reaching vital tactical features in the position and should at any time be prepared to assist in forming a defensive flank. They may be allotted additional tasks with the necessary forward fixed line to thicken up the defensive fire along the front and may also be used for harassing fire or counter-preparation (see paragraph 3, below). If they are allotted additional tasks, it must be clearly explained to the platoon commander that it is left to his discretion to decide in case of attack when he should cease fire on such tasks in order to be ready to fulfil his main role, and he should receive orders as to the minimum number of belts that he must maintain for his main task.

As in the case of forward guns, supporting guns will be given fixed lines for their penetration task; these lines will be fixed with due regard to the safety of machine gun positions and rifle company localities. In darkness, fog or smoke it may be impossible for machine gun commanders to see whether penetration has been effected by the enemy, and they will use their discretion as to when fire should be opened. If fire is delayed too long, it may fail to achieve its object.

iii. *Reserve guns*.—A proportion of machine guns may be held in reserve for such tasks as the defence of rear localities or the support of counter-attacks. Reserve guns may be placed in positions, and should be so placed in the event of fog or smoke, but more usually will be in mobile reserve. In the latter case suitable positions should be reconnoitred, whenever possible, and the necessary technical arrangements made for bringing guns into action after dark. If there are not definite tasks in view for reserve guns, the holding of a reserve should be dispensed with unless the guns can be made available without prejudice to the requirements for defensive fire. It should be remembered that the primary object is to stop the enemy in front of the foremost localities.

If reserve guns are allotted for harassing and counter preparation tasks, adequate time will be given for the necessary reconnaissance and preparations to be made during daylight. In addition platoon commanders should be clear whether movement into the forward area, which such tasks may entail, can be made in daylight or postponed until after dark. Since a platoon allotted counter-preparation tasks may find itself involved in an attack at dawn, it should be made clear under whose command it will be in such circumstances, and what action it is to take.

All machine gun commanders will be prepared on their own initiative to support counter-attacks, if able to do so.

3. *Other tasks*.—In addition to their primary tasks described in the previous paragraph, machine guns may also be employed in the defence as follows:—

i. *To hold ground*.—On occasions (Sec. 73, 5) by day machine guns may be used with little assistance beyond patrols and a few protective posts to hold a portion of the front. As they are unable to carry out this task by night, their employment in this role is unsuitable for permanent defence but may be used when temporary defence by day is required, as, for instance, on a rearguard position or as outposts covering the occupation of a defensive position. By leaving behind skeleton detachments with the guns and making use of their transport, a rapid withdrawal is possible when the time arrives.

ii. *Harassing fire* is employed to interfere with the enemy's preparations for the attack. By day it should be confined to observed shooting on important movements, and by night programmes should aim at obtaining a maximum effect from a relatively small expenditure of ammunition. Orders for such fire will normally be issued by brigade headquarters and will specify the amount of ammunition to be used; this ammunition should be dumped (see Sec. 47). Forward guns should not be used for harassing fire, guns for the purpose being found from the reserve. Supporting guns may on occasion be used, provided that they can carry out the task without prejudice to their primary role; when employed for harassing fire, it is preferable that their battle positions should not be used.

iii. *Counter-preparation* is fire directed against the enemy's probable forming-up places and forward communications, when an immediate attack is anticipated. Its object is to disorganize the enemy troops while they are still deploying and, if possible, to break up the attack before it is launched. It takes the form of short, intense bursts of fire concentrated on small areas in accordance with a definite pre-arranged plan. If the enemy can be seen assembling or deploying he should be engaged with observed fire in preference to the pre-arranged programme.

Counter-preparation depends for its effect mainly on surprise, and it is undesirable to disclose prematurely the areas on which it will fall; unnecessary firing should also be avoided, as it may disclose the position of the guns. Consequently it will be clearly laid down who is the authority responsible for ordering fire to be opened.

4. *Command and control*.—In issuing his orders, the brigade commander will indicate the extent to which the control of machine guns will be decentralized.*

If time is limited and the brigade commander is unable to prepare a detailed machine gun fire plan before issuing his orders, the machine guns will normally be placed under the command of rifle battalion commanders. When the position has become more highly organized or if ample time is available initially, the machine guns will generally be in support of rather than under the command of rifle battalion commanders. The infantry brigade commander will co-ordinate the machine gun plan by:—

i. Allotting machine gun fire tasks;

* In the case of mixed battalions, machine guns will normally remain under the command of their own battalion commanders, although under the brigade plan their fire may fall on the front of another battalion.

- ii. Ensuring that no gaps are left in the belt of fire of all arms, especially at the flanks of formations and units ;
- iii. Ensuring that the fire is co-ordinated with that of the artillery.

THE MACHINE GUN COMPANY IN THE DEFENCE

5. *Preliminary action by the company commander.*—Before accompanying the battalion commander whom he is supporting on his reconnaissance, the company commander should :—

- i. Issue warning orders to his company.
- ii. Give a forward rendezvous to all or part of his company, if time would thus be saved.
- iii. Give a rendezvous, where he will meet platoon commanders.

6. *Reconnaissance and plan.*—Whilst reconnoitring, the company commander should note areas where the ground is particularly suitable or otherwise for machine gun fire, and estimate the number of guns required for each task. He should mark on his map suitable machine gun positions and after receiving orders from the battalion commander, should be prepared to issue orders to his platoon commanders without further reconnaissance.

7. *Issue of orders.*—These will include the following :—

- i. Information of the localities allotted to rifle companies, and the location of their headquarters.
- ii. Allotment of tasks.
- iii. The number of belts to be maintained at each gun, and any instructions regarding the number of belts to be reserved for defensive fire and the amount of ammunition to be expended on counter-preparation and harassing fire tasks.
- iv. The signal for counter-preparation or defensive fire, and from where it will be made.
- v. The location of the ammunition reserve.
- vi. Intercommunication.

The detail in which the company commander will issue his orders will depend on the time available. In some cases it may be possible for him to allot areas, arcs of fire and approximate fixed lines, while in others he may be able only to order platoons to protect certain localities, leaving details to the platoon commander. The less detailed his orders, the more important will it be for him to co-ordinate later the fire of his platoons.

8. *Command and control.*—Control by the machine gun company commander during battle will be exercised largely by :—

- i. Keeping platoon commanders informed of the situation ;
- ii. The employment, under his superior commander's orders, of any mobile machine gun reserve ; and
- iii. Ensuring that all guns have an adequate supply of ammunition.

If time allows, he should reconnoitre, beforehand, with any platoon commanders that he may have in reserve, not only for positions in depth on either flank suitable in case of a break-through, but also for alternative positions and the best lines of advance to them, from which covering fire can be provided in support of a counter-attack to retake any important locality. Anticipatory reconnaissance of this nature may have a great influence on the success or failure of a counter-attack.

THE MACHINE GUN PLATOON OR SECTION

9. *Reconnaissance.*—The amount of reconnaissance necessary by the platoon commander after the receipt of his orders will depend on the detail in which such orders have been given and the foresight which he has displayed. He will in any case have to select his section areas, which should cover as wide an arc as possible consistent with adequate concealment.

Should the reconnaissance be with a view to the occupation of positions after dark, he should be accompanied by a range-taker, sentries and guides, and take with him the equipment necessary to lay out zero lines for each gun. For this purpose he will require a minimum of one hour's daylight in the platoon area if his guns are to fire effectively.

10. *Orders.*—The platoon commander's orders will be given, if possible, within view of the ground to be swept by the fire of his guns. They should include :—

- i. The situation, including information regarding the rifle company localities within the arc of fire.
- ii. The task of each section, including its fixed line, arc of fire, section area and position of readiness.
- iii. The position of platoon vehicles.
- iv. Any instructions or details regarding ammunition expenditure and the location of the ammunition reserve.
- v. The signal for defensive or counter-preparation fire.
- vi. The position of platoon and company headquarters and of the nearest rifle company headquarters.

Instructions should be added whether guns are to be dug in or reliance placed only on concealment.

11. *Command and control.*—It will rarely be possible for a platoon commander to control his platoon by voice. He will

be guided by circumstances whether to make his headquarters near that of the nearest rifle company or to select a position with one of his sections. Facilities for communication will be the chief factor in determining where he should go.

In any case, as soon as he has issued his orders, he should visit the rifle company commanders on whose front his fire will fall, and the rifle company commander in whose area he is located. With the latter he should make arrangements regarding protection and communications, with the former he should discuss the details of his fire preparations, so that any adjustments necessary may be made.

12. *The machine gun section.*—The reconnaissance of the section commander will be limited to the selection of the actual gun positions in his area, and a position from which he can control the fire of his guns. Having completed his reconnaissance, the section commander's duties are as follows:—

- i. To bring the section into action.
- ii. To explain the orders received including arcs, rates of fire, signals, etc.
- iii. To arrange for local protection and digging.
- iv. To ensure that all ammunition and equipment required is at the gun position.
- v. To get and maintain touch with the headquarters of his platoon and the nearest rifle sub-unit.
- vi. To reconnoitre for alternative positions.
- vii. To ensure that the front is kept under constant observation.

In the end the value which will be obtained from the machine guns of the defence will depend on the quality of the observation maintained by machine gun sections, the initiative of the fire unit commanders and the determination displayed by all machine gunners to carry out their role. If the gun itself is put out of action, the detachment will fight as riflemen. It is important that all information of enemy movement discovered by machine gunners should be passed without delay to the battalion commanders in the sectors affected.

76. The rifle company in the defence

1. *Preliminary action.*—A forward rifle company commander will be allotted an area to organize for defence, and within this area he may be given a definite locality or localities which must be held. Having received orders, he should proceed in the following manner:—

- i. He will make certain that he understands the artillery and machine gun fire plan, the plan for anti-tank defence,

the approximate position of defended localities on his flanks and the arrangements made for protection against surprise during the occupation of the position.

ii. He will arrange for his company to be moved to a concealed position, where anti-aircraft defence arrangements should be made and alarm posts selected for occupation in the event of sudden attack. Whatever arrangements have been made for protection by other troops, observation posts will be established to watch his front.

iii. If other arrangements have not been made, he will ensure that the front allotted to him is adequately protected by patrols (see Chapter IX).

iv. He will then carry out his reconnaissance and issue his orders in accordance with the procedure described in Chapter VIII.

2. *Reconnaissance and plan.*—The company commander will make his reconnaissance and plan with due consideration of the principles laid down in Secs. 73 and 74, 4, and Field Service Regulations, Vol. II, 1935, Secs. 33 and 67. The reconnaissance is often simplified if the ground is examined from the enemy's point of view; the solution of the attack problem will frequently indicate the best fire plan for the defence.

The sequence of thought should be first to consider how the position may be approached by the enemy, then where fire will be required by day and by night to cover these approaches and finally where the weapons should be sited to produce this fire.

3. *Dispositions.*—The company area will be defended in depth, the company being distributed in defended localities held by one or more platoons. The dispositions will depend largely on:—

- i. The ground (*e.g.* cover, obstacles, field of fire).
- ii. The fire plan and the extent to which the front is covered by machine gun fire and anti-tank guns.
- iii. The frontage.
- iv. Control.

The selection of positions for the forward localities is discussed in Sec. 74, 7. If concealed from enemy ground observation and covered by an obstacle, a field of fire from 100 to 150 yards will suffice.

The duties of platoons in reserve may be to protect by fire the flanks of the more forward localities and to hold up by fire enemy parties which may succeed in penetrating the front or which may threaten to turn its flanks; in addition, they may

be given the task of recapturing by immediate counter-attack (see Sec. 74, 11) a position lost by a forward platoon, although the cases when the situation can be restored by the action of a single platoon will be rare. Their positions should be chosen with these duties in view.

4. *Fire plan.*—The company commander will co-ordinate his fire plan with that of the machine guns, anti-tank guns, mortars, artillery and flanking rifle companies and will include in it the allotment of fire tasks to his various platoons, to ensure that a belt of fire can be put down on the whole front and that any penetration of the forward localities can be checked. He will allot the anti-tank rifles available to platoons according to their tasks, arrange fixed lines for the light machine guns and decide which, if any, of his platoons are to be equipped with grenades.

5. *Patrolling.*—Patrolling should be constant and should be directed especially towards detecting any movements or other indications of impending attack. By night or in fog, patrolling in the gaps between defended localities will be important (see Sec. 51, 6).

6. *Reserve company.*—The dispositions of a rifle company in reserve will not differ materially from those of a forward company. The company will usually be distributed by platoons, so as to facilitate control by the company commander.

The positions will be organized for fire in case the enemy captures the localities held by the forward companies; if the task of the company includes the possibility of an immediate counter attack, it will be so disposed that it can rapidly adopt the required formation (see Sec. 74, 11).

The company commander will keep himself constantly informed by means of observation posts and patrols, of the situation on the front of the forward companies, so that he may be in a position to anticipate orders and be ready to intervene without delay at the opportune moment.

7. *Liaison.*—Having made his plan and issued orders to enable his platoons to begin the organization of their localities, the company commander should arrange to meet commanders of adjoining companies and machine and anti-tank gun platoons covering his front or located in his area to arrange and adjust details of co-operation.

While the responsibility for initiating and maintaining this co-operation rests with the machine or anti-tank gun commander concerned, rifle company commanders should do everything in their power to assist. The fact that a machine or anti-tank gun commander is not under the command of

the rifle company commander concerned in no way lessens the need for this co-operation.

77. The rifle platoon in the defence

1. *Preliminary action.*—Whilst in the company assembly position, the platoon commander should ensure that his platoon is fully equipped with the arms, ammunition and tools which he requires, and that it is ready to move to its locality without delay. As soon as he has received his orders, he will send his runner to lead his platoon to an assembly position under cover adjacent to the locality to be occupied. In the mean time he will carry out his detailed reconnaissance and make his plan.

2. *Platoon commander's plan.*—To each platoon will be given a definite task or tasks. These may be to hold a particular locality or to cover with fire a line of approach by which the enemy may attempt to advance under cover. Platoons may also have orders to be prepared, by an immediate counter-attack, to recover a particular locality which may be captured (see Sec. 74, 11) or to provide patrols on the company front (see Chapter XI). In disposing his platoon, the platoon commanders will:—

i. Distribute his sections in posts in such a way that they can best carry out the fire task which he has been given. In doing so, he will ensure as far as possible that the section posts are mutually supporting and sufficiently near each other to enable him to exercise control, but not so concentrated as to constitute together a vulnerable target for the enemy's artillery.

ii. Make such arrangements as are possible to ensure mutual support by fire in conjunction with platoons on his right and left.

iii. So dispose his sections that, in the event of the platoons on his right and left being overrun by the enemy, he will be able to maintain his positions by all-round defence.

iv. Attempt to obtain surprise and the maximum of security by making the best use of natural cover to obtain concealment and protection from fire. In open country concealment from air observation will be impossible once digging proceeds beyond the weapon pit stage, though it may be possible to camouflage weapon pits. Digging beyond the weapon pit stage will therefore depend on the policy laid down (see Sec. 74, 8).

v. Arrange to patrol any dead ground on his front.

vi. Consider the natural obstacles available, and how best they can be used.

vii. Strengthen the defences as soon as possible by erecting an obstacle and by improving the natural cover. Defiles leading into the position (roads, bridges, etc.) will be blocked at the first opportunity. Fence wire, trees, agricultural implements, etc., can be utilized; even a single trip-wire concealed in grass is of value. Care should be taken that any obstacles placed in position are under the fire of the defence and that they are not bullet-proof. They should also be sufficiently far away to prevent enemy patrols from throwing hand grenades into the post.

viii. Ensure that he has an adequate supply of ammunition.

ix. Arrange for sanitation.

x. Select an alternative position which can be occupied in the event of his original position being rendered untenable by gas bombardment.

xi. Co-ordinate the fixed lines of his light machine guns with those of the platoons on his flanks and in rear and of any machine guns covering his front.

xii. Ascertain the position of machine and anti-tank guns which are covered by his dispositions or whose defensive fire will fall on his front.

If given a counter-attack task, he will plan it in detail and arrange for fire support and rehearse it to any extent that is practicable.

3. *Organization and routine.*—Platoon commanders will organize the duties and the work to be carried out by their sections and arrange for a definite programme of work to be drawn up for each post. The policy with regard to digging is discussed in Sec. 74. As much work as possible should be done in daylight. One man in each section post will be on duty by day, but at night or in foggy weather double sentries will be posted, who will be relieved alternatively. Patrolling is the best protection in darkness and in fog.

Bayonets will generally be fixed at night and always in foggy weather or when the view is obscured by smoke.

Equipment will always be worn in all the posts held by the forward companies, although special orders to remove it may be issued by the company commander in the case of a working party. It will then be kept close at hand. Anti-gas respirators will be carried when there is the possibility of gas attack.

Movement in daylight in the open to and from the posts will be restricted in all forward defences which can be seen by the enemy's ground observers.

All defences will be manned one hour before it begins to get light and for an hour after sunset, until such time as the

platoon commander is satisfied there is no danger of a dawn or dusk attack.

The platoon commander will frequently visit his section posts to ensure that the men are alert; this may not, however, always be practicable or advisable by day unless the posts are connected. He will always be accompanied by an orderly.

He will ensure that all men of his company know the position of platoon and company headquarters and of localities on their flanks.

4. *Resistance.*—In the event of attack, the platoon will defend the area allotted to it to the last round and the last man, and will make a final effort with the bayonet sooner than surrender. In no circumstances will it withdraw unless definite orders to do so are received from a superior officer.

5. *The section in the defence.*—Details regarding the procedure to be adopted and the duties of a section commander are contained in Infantry Section Leading.

78. Mortars in the defence

1. *General considerations.*—Many of the difficulties in connection with ammunition supply which occur when the mortar is used in a role requiring mobility disappear when movement is not essential. In such cases the full power of rapid fire of the mortar can be exploited.

2. *Tasks.*—The tasks which may be given to mortars in the defence are as follows:—

i. *To support counter-attacks.*—For this purpose mortars may be placed under command or in support of companies which may be required to carry out an immediate counter-attack (Sec. 74, 11); they may also, in the absence of artillery, be used to force the enemy by concentrated fire from a locality which he may have occupied, and which can subsequently be re occupied by patrols.

ii. *To form a reserve of fire.*—The battalion commander has in the mortar a powerful weapon which may be used to supplement the fire plan at any point where it is proving to be ineffective, to break up enemy formations which have penetrated the defence.

iii. *Defensive fire.*—On occasions they may be included in the fire plan of the defence to deal with some part of the front which is not adequately covered by other weapons. When so employed they should be laid on fixed lines and arrangements made for opening fire should be similar to those for machine guns. Orders should be issued as to the allotment of ammunition to tasks.

iv. *With outposts* (Sec. 73, 9).—Mortars will often be of value with the outposts or patrols covering the occupation of the position, particularly if they cannot be covered by the artillery of the defence on account of range or lack of observation; the surprise effect of a burst of rapid mortar fire, especially if the enemy is passing a defile, will cause delay and may enable the covering troops to carry out their task without becoming closely engaged.

3. *Dispositions*.—To carry out these tasks, mortars will usually be dug-in in the reserve company area, either singly or in pairs. By siting the mortar positions centrally it will often be possible for all mortars to fire on any portion of the battalion front. For reasons of control, administration and concentrated fire, there are advantages if the mortar positions are not too widely dispersed; detachments should not, however, be so close to each other that they are in danger of being put out of action by an artillery concentration or smoke screen. The mortar area, if detachments are sited close together, will be easier to locate, and, if discovered, is a likely target for enemy artillery.

79. Anti-tank defence

(See also *Field Service Regulations, Vol. II, 1935, Sec. 39*)

1. *General remarks*.—Anti-tank defence in the forward area is in the first instance the responsibility of battalion commanders; later it will be co-ordinated by higher commanders. Apart from the support available from other arms—artillery fire, tank action and mines—the means available for the infantry for its own protection include the use of ground and obstacles, anti-tank weapons and small arms fire.

The passive means of defence include the use of natural obstacles (such as woods, streams, marshy ground), of the protection afforded by buildings (or by blockhouses specially constructed when time is available) and the construction of artificial obstacles of various types.

2. *Use of ground*.—Whenever possible, infantry units will be sited in tank-proof localities, which will be so selected that the infantry can develop the maximum fire power to break up and defeat the attack of the hostile infantry. Protection can also be secured by making use of cover from view and by the occupation of fire positions such as narrow trenches of which the occupants will not be in danger even if the trenches are crossed by tanks. For fear of anti-tank weapons, the tanks will be moving as fast as possible and that when its shutters are closed a tank is very "blind." Observation and accurate fire by the crew in such cases are difficult and unless

infantry is bunched in the open, the material effect of a tank attack is small.

In the selection of a defensive position, the importance attached to its suitability for anti-tank defence in comparison with other requirements will depend on the extent of the threat of enemy tank action.

Where natural tank-proof localities and obstacles do not exist, special arrangements for the protection of the infantry will be necessary.

3. *Anti-tank minefields*.—Anti-tank mines can be easily transported and quickly laid. They will, therefore, be of great value for the rapid blocking of roads and defiles and, in the occupation of a defensive position, for supplementing natural anti-tank obstacles and the fire of the artillery and anti-tank weapons. If available in sufficient quantities, they can provide an extensive and highly effective tank obstacle.

By reason of their effect on the possible action of friendly tanks and of the necessity for their siting to be co-ordinated with the artillery defensive fire, the construction of minefields will only be undertaken under the orders of formation commanders. Their exact position will be carefully recorded and the defences so sited that the minefields can be kept under effective small arms fire by day or night.

Anti-tank mines will normally be laid by the engineers. They may be disposed, closely spaced, in one or two lines or, more widely dispersed, in depth. They may conveniently be laid in the wire obstacles of the defence, where not only will their detection be more difficult for the enemy but their location will be to some extent marked for friendly tanks. A dummy minefield can be scratched by a few men with picks in a short time or may be represented by circular logs, and is difficult to distinguish from a live field in an aeroplane photograph. Dummy minefields may often be combined with live minefields in the general scheme of anti-tank defence and may serve as a deterrent against tank attack, especially if the enemy is aware of the existence of live minefields on other lines of approach. It is the duty of infantry to prevent enemy ground reconnaissance of minefields both live and dummy. Close co-operation is therefore essential between the troops laying the minefield and the infantry whose duty it is to cover it with fire.

4. *Anti-tank obstacles*.—The creation of artificial obstacles takes considerable time and labour; it will, however, often be possible to improve existing natural obstacles.

5. *Anti-tank guns*.—The anti-tank guns will be disposed in accordance with the anti-tank plan, and their tasks will be

co-ordinated with those of any artillery employed in anti-tank defence and with the siting of anti-tank minefields and other obstacles. If time is limited, the initial siting of anti-tank guns may be left to battalion commanders, the brigade resources being allocated to sectors in accordance with their importance and vulnerability to tank attack.* When such decentralization is necessary, the tank defences will be co-ordinated by brigade commanders at the first opportunity. The anti-tank guns will be sited to cover the probable avenues of tank approach and localities liable to tank attack. They should be disposed in depth, and concealment will be of importance, as the enemy will attempt to neutralize them by fire or smoke, if located. Full use should be made of the mobility of anti-tank guns, and alternative positions should be reconnoitred and prepared. It will sometimes be advisable for guns to be kept in mobile reserve under cover ready to move to prepared positions as soon as the direction of the tank attack is disclosed.

6. *Anti-tank rifles.*—The anti-tank rifles (see Field Service Regulations, Vol. II, 1935, Sec. 39, 2) will remain in possession of companies and will be disposed under company arrangements for local protection; they will be sited and given tasks with due consideration to the anti-tank plan for the defence of the sector.

7. *Small arms fire.*—In addition to weapons designed purely for anti-tank defence, small arms fire may also be employed. During an attack by tanks alone, the maximum small arms fire should be directed against the slits in the armour. Though the apparent damage caused by this fire may be slight, no tank is entirely secure against small arms fire; if a large volume of fire is directed against the loopholes, through which both tank drivers and gunners must observe to fight their tank effectively, the effect on the efficiency of the tank is obvious. The moral effect on the crew caused by the noise of the bullets against the armour of the tank is also considerable. In the case of a tank attack in co-operation with infantry it must be realized that the greater danger comes from the latter if it is allowed to get to close quarters. The primary target of rifle fire, light machine guns and machine guns will therefore in such cases be the enemy infantry.

80. Further considerations in protracted defence

1. The principles which have been referred to in the preceding sections are equally applicable to the case of protracted defence.

* Applies primarily to mixed battalions.

2. As time passes, there will be a gradual elaboration of the temporary defences; obstacles and the trench system will be developed and the fire plan will be determined in greater detail.

As a result, the forward positions can be held with fewer men, which will allow of greater depth; eventually an outpost position will be formed and the main position will be organized in rear.

3. It should be anticipated that the enemy will, sooner or later, concentrate powerful forces of tanks, artillery, mortars and other means of destruction. Distribution of the defence in depth is therefore of increased importance; first because it tends to conceal the actual dispositions of the defenders and so to reduce losses, and secondly because the weight of the attack may be such that it will shatter the more forward defences, which are exposed to concentrated artillery and mortar fire.

4. The fire of all arms will be co-ordinated with a view to breaking the enemy's attack in front of the main position. At the same time a commander will ensure that adequate support is afforded by the other arms to the troops detailed to hold the outpost position.

The length of time for which it is necessary that the outpost position be held will depend on the plan of the higher command for fighting the defensive battle.

In certain circumstances and on certain specially important portions of the front it may be advisable to hold the outpost position in sufficient strength to force the enemy to deliver an organized attack on it. The preparations for such an attack would generally be discernible and the commander of the defence would have the choice of resisting the initial attack in the outpost position, or of withdrawing the troops from it at a suitable time.

But, whatever the distribution of the force, there is only one degree of resistance for the troops, whether they are in occupation of the outpost position or of the main position. In the event, therefore, of the commander deciding to withdraw the troops in the outpost position, clear instructions will be issued to the infantry and the supporting arms as to their action and the methods to be adopted.

5. During protracted defence areas of ground may be occupied by troops for long periods. Particular attention will therefore be paid to sanitation and the care of health.

6. Further details of protracted defence, including relief of units, are contained in the chapter on position warfare in Field Service Regulations, Vol. II, 1935, Chapter IX.

CHAPTER XIII

NIGHT OPERATIONS

81. General considerations

1. The general principles with regard to movements and operations at night are discussed in Field Service Regulations, Vol. II, 1935, Sec. 77. The influence of the air arm and the great fire power of modern armies have enhanced the importance of movement by night and have increased the frequency of night operations.

Night operations have serious drawbacks and dangers; the difficulties of control are much increased and men are less influenced by the example of their leaders; the situation is more obscure than by day and obscurity brings with it uneasiness; there is a liability to mis-direction, confusion and even panic; the physical condition of troops is apt to be impaired by loss of sleep. But these dangers can be much lessened or overcome by discipline, training and careful preparation: an army which by practice has acquired skill and confidence in work by night will hold a great advantage over less well trained enemies and will often gain the moral and material benefits of a successful surprise.

2. Apart from the discipline and training of the troops, the chief requirements for success in night operations are that the plan should be simple and that the reconnaissance and preparation should be thorough. Reconnaissance of the route or ground over which the operation is to be carried out should be made by night as well as by day, and by as many of the commanders concerned as is practicable. Preparations include:—careful calculations of time and space, checked over the actual ground if possible; precautions against the danger of loss of direction (*e.g.* marking of the route, taking of compass bearings, making sketch maps and silhouettes of prominent landmarks; artillery fire may also be used as a guide); plans for the removal or crossing of obstacles; provisions for distinguishing friend from foe (badge or pass-word); organization of means of intercommunication; devices for maintaining silence and secrecy and for deceiving the enemy; arrangements for the rest and feeding of the troops; details of the equipment to be carried; and any other measures that prudence, forethought and ingenuity may suggest. It is

important that troops embarking on a night operation should be rested as much as possible and given a meal before starting. The thoroughness and care with which a night operation should be planned will be limited only by the time available. Secrecy is important, since failure to achieve surprise may neutralize the most careful preparation; but all troops taking part must fully understand their roles in the operation.

3. Night operations may be divided into:—

- i. Night marches, *i.e.* movements in normal march formation.
- ii. Night advances (or withdrawals), *i.e.* movements made in some battle formation, in proximity to the enemy;
- iii. Night attacks, delivered either by troops already in position, or after a night advance or night march.

Attacks at dawn are not included in the term night operations; but the approach, assembly and other preparations, which will usually be made under cover of darkness, will be governed by the rules for night operations; these are applicable also in many respects to operations in thick fog or mist.

4. If a night advance is the sequel to a night march, a point known as the assembly position will be selected beforehand; at which point the normal march formation will be abandoned and a battle formation adopted.

If a night attack is to follow a night advance, a forming-up place will be chosen, where the troops detailed for the assault will deploy from the formation in which they have made the advance into the formation in which they will assault.

Thus, if a night attack is to be initiated at a distance from the enemy, the sequence may be: a night march to a position of assembly; thence a night advance to a forming-up place, where final deployment for the assault takes place.

5. Although night operations against savage enemies, who are accustomed to movement in the dark, may entail some risk and may sacrifice the advantages of a superior armament, they have, if well planned and executed, a great moral effect on some uncivilized enemies (*see* Field Service Regulations, Vol. II, 1935, Sec. 94, 4).

82. Night marches

1. The route for a night march should, when possible, be reconnoitred both by day and night. Branch roads or other places where the column might go astray, and points where checks are likely to occur, will be noted and clearly marked, as will also the starting-point for the column. If the march

is to be made across country, the route will be fixed by compass bearings. Landmarks which are visible by night will be noted and the distance between those that lie on the line may be checked. In addition to the officers responsible for guiding the column, it is advisable to detail an officer to check the distance marched and the progress of the column with reference to the landmarks which have been noted. Where the country is featureless, it may be necessary to post men at certain points along the route, particularly at places where a change of direction has to be made; they will be given the compass bearing and the distance to the next post.

2. It is best to retain the regulation distances between units, in order to prevent constant checks throughout the column; but they may on very dark nights be reduced or omitted. An officer will invariably march in rear of each unit. Touch should be maintained throughout the column, connecting files being used as necessary. The time and periods of halts will be arranged before starting; no unit will halt until it has regained any distance that it may have lost. During halts men may lie down, but should not leave the ranks. When it is anticipated that the advanced guard will make slow progress, it may sometimes be advisable for the main body to advance by pre-arranged bounds, movement beginning only as each section of the road is known to be clear. By this method the main body can move, when it does so, at a more comfortable pace and many tiring checks will be avoided.

Every commander will have a fixed place in the column where he should remain. Liaison personnel should be used to convey instructions from headquarters to subordinate commanders.

3. It is not safe to calculate on a large force averaging more than two miles an hour; the darker the night, the slower will be the pace.

4. The above instructions apply generally to all marches by night, whether or not the column is protected by the dispositions of other troops. If it is not, and there is any possibility of the enemy being encountered, advanced flank and rear guards will be detailed. Their size and their distance from the column will vary according to the ground and to the darkness of the night. They need usually only be large enough and at a sufficient distance to prevent small bodies of hostile troops from interfering with the march; if the enemy is likely to be met in any strength, movements should not be undertaken in column of route, from which it is difficult to deploy quickly in the dark without confusion. In enclosed country the flanks are best protected by posts placed in posi-

tion by the advanced guard and withdrawn by the rear guard; in open country flanking patrols may sometimes be used instead of stationary posts, but they are liable to lose direction unless accustomed to night work.

The advanced guard will usually be responsible for blocking all branch roads which are not to be used, either by posting men or by placing some pre-arranged block across them (*e.g.* a line of stones or the branches of trees); if men are posted, they will be withdrawn by the rear guard.

After crossing an obstacle or defile, where opening out is likely to occur, the column will advance about its own length and then halt until the rear has closed up.

No more transport should accompany the column than is absolutely essential, and the extent to which M.T. is able to move without lights will depend on the darkness of the night. The factor of noise must be borne in mind.

5. If the march is being made to an assembly position as a prelude to a night advance or night attack, this position will be carefully reconnoitred and should be so selected (at or near some well-defined natural feature) or so marked as to be unmistakable at night. It should be secured by advanced troops in good time beforehand.

6. All ranks will be informed what their action is to be in the event of alarm or attack, or of an aeroplane dropping a flare. Rifles will not be loaded, but magazines will be charged: no firing will take place without orders. Silence will be maintained, and no smoking, striking of lights, or use of electric torches will be allowed, except by permission of the commander of the force.

83. Night advances

1. A night advance, *i.e.* a forward move in battle formation, is undertaken when it is desired to gain ground under cover of darkness, and the enemy is too close for the movement to be made safely in march formation. A night advance may follow a night march, and may be the preliminary to a night attack or to an attack at dawn.

2. When a night advance follows a night march, the choice of a suitable assembly position (Sec. 81, 4) is of great importance. It should be clearly recognizable (Sec. 82, 5); if possible, afford cover to the troops and should enable deployment into open formation to be made quietly and without confusion; points such as important cross-roads, which are likely to be registered by the hostile artillery, should be avoided. The deployment must always be made under cover of protective detachments.

The distance of the assembly position from the objective will depend mainly on the nature of the country and on the size and composition of the force; other factors, such as the vigilance of the enemy and the state of the moon or of the weather (for instance, a hard frost making movement audible at a greater distance than usual), will also have to be taken into account. Very generally, it will not usually be safe to continue in march formation within about 2,000 yards of a vigilant enemy.

3. As thorough a reconnaissance as possible will be made of the ground over which the advance is to take place; in particular, note should be taken of the existence of any obstacles (such as a wire fence) for the removal or passage of which special measures may be required. Aeroplane photographs, verticals or obliques, will often be of great value. Compass bearings should be taken and notified to all concerned. The instructions laid down in Sec. 82, 6, regarding loading of rifles, smoking, silence, and showing lights, apply equally to night advances.

During a night advance it is necessary not only to maintain direction but also to check the distance traversed. To guide each body of troops, an officer should be specially detailed and should have no other responsibilities; a second officer should check the direction and be prepared to act as guide should the other become a casualty. The methods of maintaining direction are described in the Manual of Map Reading, Photo Reading and Field Sketching, 1929, Appendixes I and II. In addition an officer should be detailed to check distances; these may be paced but accurate pacing by night is difficult. A more accurate method is the use of a tape of convenient length for calculation (*e.g.* 25, 33 or 50 yards), the actual length depending on the darkness of the night and other circumstances. On a dark night this tape may be used also as a means of signalling between the leading guide and the head of the column, the message depending on the number of pulls on the tape. Signals forward might represent "Alignment correct," "Move to left," "Move to right" or "Return," while signals back from the guide might halt the column or allow it to advance.

4. The advance should be preceded by strong protective patrols under officers whose duties will be ground reconnaissance, local protection and action against enemy patrols or outlying piquets; these should be rushed in silence with the bayonet without hesitation.

The forward troops of the main body will be in the formation which allows of the maximum control combined with

rapidity of deployment; a line or lines of platoon columns at deploying intervals will often be suitable. It is advisable that there should be local reserves behind the flanks of the forward troops; they will then be well placed to envelop the enemy's flank or to deal with a counter-attack from the flank. The reserve, which may include machine guns for consolidation, may be in any formation suitable for movement and control. Connecting files to maintain touch from front to rear and laterally should be freely used. The frontage covered by a battalion in a night advance will be less than by day, and will not normally exceed about 600 yards. If, however, there are defiles on the line of advance or the ground is difficult to cross when deployed, it may be preferable for platoon columns to follow one behind the other and to wheel into their positions on reaching the forming-up place.

The commander of the force should be well forward, so that he can exercise control in the event of some unforeseen obstacle or development.

5. If there are obstacles, known or suspected, to be cleared away, small parties of engineers may be detailed to accompany the forward troops. If there is delay in removing obstacles, the troops will lie down until a passage is cleared. All ranks should clearly understand what their action is to be if the enemy opens fire before the objective (or forming-up place) is reached. Unless other orders are issued, the advance will be continued steadily in the same formation and at the same pace.

6. The rate of advance will depend on the ground and on the darkness of the night. It is not usually safe to count on troops in deployed formation moving in the dark faster than 100 yards in three minutes or about one mile an hour.

NIGHT ATTACKS

84. General considerations

(*See Field Service Regulations, Vol. II, 1935, Sec. 82*)

1. Night attacks have the advantages of avoiding the aimed fire of the enemy (except of machine guns and light machine guns laid on fixed lines), of surprise (if proper preparations have been made and precautions taken), and of moral effect, especially against less well-trained troops. At night, in fact, superiority in discipline and in training has even better opportunity to exploit its full value than by daylight.

With well trained and reliable troops darkness may often be well employed to neutralize the effect of the enemy's fire,

in the absence of adequate supporting fire for an attack by day.

2. The scope and method of conducting a night attack will be affected by the lightness of the night. Control and the maintenance of direction are easier on a light night, and more ambitious operations are therefore possible; even on a bright night it is possible to approach within 100 yards or so of an alert enemy without being discovered, provided that skylines are avoided; at the same time the fire power of the defence is vastly reduced and accurate fire is impossible.

On a dark night the objectives will be strictly limited, both as regards frontage and depth.

The state of the moon will often influence the hour chosen; for instance, the light of the moon may be used for the approach, the actual assault being delivered when it has gone down; or the assault may be made just as the moon rises, so as to have the advantage of its light for consolidation.

3. Night attacks which require a preliminary night advance to approach the enemy run a greater risk of premature discovery, if the enemy is vigilant, or of some mishap or mistake. On the other hand, if the enemy is not vigilant or can be deceived, a complete surprise may be effected. As the risks of such an operation are great, so must the preparation be thorough.

85. Organization and conduct of night attacks

1. *Organization*.—Once the decision to undertake a night attack has been made, the operation will resolve itself into six stages:—

- i. Reconnaissance and preparation.
- ii. March to the assembly positions.
- iii. Advance of the assaulting troops from the assembly position to their forming-up places.
- iv. The assault.
- v. Consolidation.
- vi. Exploitation.

If the movement is being carried out behind covering troops, ii. and iii. may merge into one.

2. *Reconnaissance and preparation*.—Commanders of all sub-units should, whenever possible, view the ground over which the attack is to pass; a further reconnaissance should be carried out after dark, in order to locate any landmarks that may be visible and to select suitable stars on the compass bearing. View-points will be carefully selected and officers stationed at each one to ensure that the interests of secrecy

are observed. Air photographs, vertical and oblique, will be of value during the preparation of the attack. Compass bearings will be taken and notified to all concerned.

Objectives should be so selected that they can be easily found at night; it will be of assistance if they show up against the night sky, and for this reason it is often an advantage to attack uphill. Particularly on dark nights, when objectives are limited and exploitation must wait till dawn, it will be advisable to determine the key localities on the objectives and to detail definite bodies of troops, normally not less than a company, to capture each. By this means local resistance can be overcome, troops brought under control and an area organized for further action. Ground between these localities may be ignored until dawn and then dealt with from the flanks. The main objectives should not rest on ground which in daylight will be overlooked by the enemy from a flank.

The wearing of distinctive marks will be necessary both for the purpose of recognizing friendly troops from the enemy and also for the recognition of leaders.

3. *Assembly positions* (see Sec. 81, 4, and 83, 2).—When there are no covering troops in front, adequate protection will be required for the assembly positions.

The orders for the attack will usually have been explained to all concerned beforehand. In any case, before the troops move off from their assembly positions to the forming-up places, it is essential that the more important points should be clearly explained to all ranks so that everyone may know:—

- i. The object in view, the direction of the objectives and its distance from the forming-up place.
- ii. The formation to be adopted at the forming-up place.
- iii. The part that he has to play.
- iv. His action in case the enemy is not surprised.

Rifle platoon commanders will also satisfy themselves that the men fully understand the following instructions:—

- v. Rifles will not be loaded, but magazines will be charged. No man will fire without an order.
- vi. Until daylight bayonets only will be used in the attack.
- vii. Silence will be preserved; there must be no smoking, talking, coughing, rattling of equipment, etc., nor will the flashing of electric torches be permitted.
- viii. If obstacles which cannot be readily traversed or removed are encountered, the troops will lie down until a passage has been cleared.

Watches will be synchronized at the assembly position and compass bearings checked.

4. *Advance to forming-up places.*—The method of advance to the forming-up place is described in Sec. 83; troops should reach their forming-up places fresh and in time to allow of a short halt before the attack begins; during this halt leaders should verify their positions and the line of advance.

Should the enemy open fire during the advance from the assembly position to the forming-up place, the advance will be continued deliberately until the latter is reached.

5. *Forming-up places* (see Sec. 81, 4).—The forming-up of the troops for the attack requires careful organization to ensure that it is conducted noiselessly and without confusion. The forming-up place should be as near the position to be assaulted as is consistent with the necessity of avoiding detection by the enemy; if possible, it should be within 500 or 600 yards of the objective, since it is difficult to maintain direction and formation in the dark for long when fully deployed; the process of forming up will be covered by patrols or troops already in position; it should be easily recognizable, and, if no natural landmarks are available, it may have to be marked by tapes or other means. If tapes are used, they will not be placed in position in daylight as they can be seen from aircraft.

On arrival at the forming-up place troops will assume their assault formations.

6. *Assault formations.*—Assault formations by night are governed by the following considerations:—

i. On dark nights manoeuvre is generally impossible and in consequence depth is not required to any great extent. On bright nights some manoeuvre may be possible within platoons, and even within companies when opposition is met. Some depth will be necessary to enable this manoeuvre to be carried out and for exploitation, which may be possible on a light night. Distances will depend on visibility and the necessity for control.

ii. The intervals between sub-units also depend on the brightness of the night and the necessity for maintaining touch. It follows that the frontage which can be covered by a platoon or company increases in proportion to the light.

iii. The essence of success lies in surprise; formations and timings should be such that the attack strikes the hostile front everywhere at the same moment.

iv. One of the chief dangers to be avoided will often be the enemy's defensive fire on fixed lines; if surprise is achieved, the bulk of this fire should fall behind the assaulting troops, but may interfere with the reserves. For this reason the first wave of the assault should be proportionately increased.

On a dark night the most usual formations for a leading company or platoon will be a line of section columns followed closely by local reserves, each section moving in file until the enemy is encountered. The frontage of a company may be no more than 100 yards. On lighter nights intervals and frontages will be greater, and, if manoeuvre is considered possible, the reserves will be increased.

7. *The assault.*—All ranks should understand that, once the forming-up place has been left, the assault will be carried through to the objective, whatever happens; hesitation is fatal. If the enemy opens fire before the objective is reached, the force will continue to press forward and will carry through the attack. The assault will be carried through in silence with the bayonet. Every effort should be made to prevent troops forming front to a flank in order to face the enemy's fire; such action leads to loss of direction and impetus in the attack and tends to endanger parties especially detailed for flank protection.

No movement to the rear will be permitted, even to correct mistakes which have been made.

8. *Reserve.*—The battalion reserve will be available to exploit success at daylight and to provide patrols after the assaulting companies have reached their objectives.

9. *Consolidation.*—Consolidation will be carried out in accordance with principles laid down in Sec. 73; the success will depend on forethought and the discipline of the troops to avoid the confusion which must otherwise occur. Parties will be detailed to clear the objective systematically, for the collection of prisoners and other tasks. The following points will also be important:—

i. Troops will be reorganized as early as possible and formed into organized bodies with reserves; some thinning out may also be necessary. Dispositions will be made to resist counter-attacks and patrols pushed forward to gain information and to guard against surprise.

ii. Machine guns should be pushed forward quickly to give depth to the defence. If the advance is to be continued at dawn, machine guns should make use of darkness to get forward to suitable localities from which they can quickly make arrangements, when light permits, to support the attack.

iii. The general line on which the forward posts are to be sited should have been selected with a view to its being easily found at night. Artillery and machine gun support will be facilitated if this line is clearly marked on the map and on the ground.

iv. Where it is not intended to make an immediate further

advance, important localities should be wired before daylight and cover for the garrison prepared. The supply of engineer material and tools and their despatch to the required places by night, will require consideration.

v. Sites of the various headquarters will be determined beforehand or it will be difficult for commanders to find one another during the night. The efficiency of rapid consolidation will depend largely on the establishment of simple signal communications.

vi. Anti-tank defence.

10. *Exploitation*.—An immediate task may be the clearing up of the objective, in which parties of the enemy may still remain; patrols will also be sent out to the front and flanks to locate the enemy.

On a dark night it will usually be advisable for exploitation to be deferred until daylight, except for the action of patrols.

Where the intention is to push forward as early as possible after dawn and thus to take advantage of the surprise and disorganization caused to the enemy, strong patrols will be organized to push forward and locate the enemy as soon as light permits—on their report will depend the further action of forward troops and supporting arms in the next stage of the attack. Where the enemy is found to have retired some distance, it will usually be necessary to organize this forward reconnaissance by detailing companies to push forward as a series of advanced guards.

On light nights and in favourable circumstances against defences not highly organized it may sometimes be possible to continue the advance within limits by night. A complicated plan involving the capture of a succession of objectives is, however, a risky undertaking at night. The success of a night attack rests on surprise and, once surprise has been given away, the advantages rest mainly with the defender, who is fighting on ground which he knows and with organized communications. The attacker, on the other hand, is handicapped by lack of observation, and for him the situation will often be obscure for some considerable period after the first assault.

If, therefore, an attack on a second objective is to be carried out, sufficient time should be allowed to elapse after the first assault to ensure that troops attacking the second objective can be formed up without risk of confusion and to obtain, if possible, some measure of surprise.

11. *Orders for night attacks*.—Orders for night operations will often contain considerable detail. The following are some of the chief points with which they may have to deal:—

i. The timing of the operation; times of arrival and departure at the assembly position and forming-up place; time and place of halts; synchronization of watches.

ii. Description of the assembly position and forming-up place; their distance from objectives; compass bearings.

iii. Formations to be adopted at the assembly position and forming-up place.

iv. Action of artillery and engineers.

v. Equipment to be worn or carried by troops; arrangements for tools for consolidation.

vi. Distinctive marks and password.

vii. Description of objectives.

viii. Any special instructions for the attack; signal for the assault.

ix. Position of commanders and arrangements for inter-communication.

x. Arrangements for consolidation.

xi. Administrative measures: ammunition, casualties, rations, water, prisoners, etc.

The issue with orders of a sketch plan, showing the assembly position, forming-up place, prominent landmarks, etc., will often be of value.

NIGHT WITHDRAWALS

86. General considerations

1. When in close contact with the enemy, a withdrawal can most easily be effected at night. Subject to the remarks below, the conduct of the withdrawal will be similar to that by day (*see* Sec. 60). The essential condition is to avoid confusion and congestion of the avenues of withdrawal.

2. If the enemy does not discover the intention to withdraw until it is dark, he will:—

i. have great difficulty in organizing and setting in motion a pursuit;

ii. be uncertain as to the extent of the withdrawal, and will have to proceed with caution.

3. Secrecy is therefore of supreme importance, and the following principles will be observed by the force withdrawing:—

i. Normal activity will be maintained as long as possible by forward troops and artillery, and care taken to avoid any marked increase in firing that might tend to make the enemy suspicious.

ii. Troops holding the position will be withdrawn on a definite timed programme, beginning with transport, troops

in reserve and such artillery as is not required to display normal activity.

iii. Fighting patrols should be sent out at frequent intervals in order to drive in the enemy's patrols or keep them at a distance.

iv. Forward troops will be the last to move. The foremost troops should be thinned out gradually and withdrawn in small bodies to the rear by the most direct routes. No attempt should be made to concentrate them until they are well clear of contact with the enemy. Some machine guns should be left in position until the withdrawal of the forward troops is nearly completed; those selected for this purpose should be sited to fire on main avenues of approach to the position, and must have good routes available so that they can be withdrawn rapidly at the required moment.

4. A carefully prepared time-table is the basis of a well-organized withdrawal. The times laid down for the different phases will be scrupulously observed. The fact that a neighbouring unit has withdrawn should not make a unit hasten its own departure unless it receives a written or verbal order to do so from an officer with authority to give it.

CHAPTER XIV

FIGHTING IN CLOSE COUNTRY, WOODS AND VILLAGES

87. The influence of close country on offensive and defensive operations

1. *General.*—A tract of country in which view and movements are seriously restricted by woods, hedges, etc., is termed "close country." Its influence on tactical methods will vary according to the season of the year.

The chief characteristics of fighting in close country are :—

i. The effective use of tanks, artillery, machine guns and light machine guns is considerably reduced. The movement of armoured fighting vehicles will be confined generally to roads and tracks; the closer the country, the more their freedom of manœuvre is restricted. Lack of observation will limit the effects of artillery and machine gun fire.

ii. The cover available will enable the infantry to conceal from both ground and air observation its dispositions and movements more than in open country; in consequence a greater measure of surprise is possible both in attack and defence, and adequate measures for protection are important.

iii. The collection of information, control and co-operation become increasingly difficult, the more enclosed the country. Much will depend on clear initial orders, the initiative of junior leaders and the closest touch being maintained between units. Fronts should be relatively small, and reserves kept closer to hand than in open country.

2. *Woods and villages.*—Woods and villages form extreme types of close country. When fighting inside a large wood or village, the infantry of both sides generally escapes from the full effects of artillery fire, owing to the difficulty of communicating to the guns the exact positions of the combatants. A certain advantage is conferred on the defence in that defences and obstacles can be organized so as to force the enemy into the arcs of fire of machine guns and light machine guns; also, movement inside woods, and the exact positions of the defensive works, are difficult to see from the air or to detect on an aeroplane photograph.

Small woods and villages offer favourable targets for concentrated artillery bombardments. If it appears likely that

they will be heavily shelled or gassed, the casualties incurred in fighting for them will probably be out of all proportion to their tactical value.

ATTACKS IN CLOSE COUNTRY

3. *Advantages to attacker.*—In the attack, close country presents certain definite advantages for well-trained infantry, which may be summarized as follows:—

- i. More cover can be obtained and surprise is therefore facilitated.
- ii. The observation and fire of the defence, particularly of the machine guns and rifles, is restricted, which enables the attacker to get more easily within assaulting distance. Surprise is therefore facilitated.
- iii. To cover the front with fire, the enemy must site posts at close intervals with consequent loss of depth, this is expensive in personnel; the posts are likely to be weak and the mutual protection of posts is difficult to achieve. These conditions give opportunities for attack by infiltration.
- iv. Having forced a breach in the enemy's line, the assaulting troops are less likely to be troubled by machine guns in depth.
- v. The value of the enemy's artillery is very largely neutralized by lack of observation and a counter-attack by tanks will often be impossible.
- vi. Once penetration has been effected, the enemy on the flanks will be in doubt regarding the situation. On the front of attack, the assaulting troops will be in superior strength and the moral advantage will also be with them.
- vii. Reserves can be manoeuvred close to the enemy with greater security against enemy fire.

4. *Disadvantages to attacker.*—The disadvantages to the attacker lie in the following:—

- i. Information regarding the enemy is difficult to obtain.
- ii. Control and maintenance of direction are difficult.
- iii. The full power of supporting weapons can seldom be developed.
- iv. Tank assistance may be impossible.

5. *Method of attack.*—If the infantry is highly trained, the advantage rests with the attack, more particularly if the enemy is over-extended and has had little opportunity for the erection of barbed wire and other obstacles. When adequate supporting fire is not available, close country should be sought by the infantry as offering the best facilities for a successful

advance. To operate successfully, troops must be highly trained and resolutely led.

Objectives should be lines (roads, tracks, streams, clearings, etc.) which can be easily recognized on the ground, and along which touch can, as necessary, be re-established. The distance between them should not be too great and the progress of troops operating on neighbouring routes should be co-ordinated step by step, liaison being achieved by patrols meeting at pre-selected places. Fronts should be relatively small and reserves kept closer to hand than in open country. The use of the compass to maintain direction will be imperative, and every opportunity must be taken to reorganize both for the purpose of regaining control and for checking the direction of the advance.

In certain circumstances artillery may be able to assist infantry in maintaining direction by the use of smoke shell.

6. *Protection.*—When moving in file along covered approaches such as hedges or ditches, infantry should take steps to avoid being caught unawares by enfilade fire at short ranges. Much depends on the way in which local protection is organized. Infantry may suddenly come under a heavy surprise fire at any moment, and should be prepared for this eventuality; a forward rush will often be the best reply to such enemy action.

DEFENCE IN CLOSE COUNTRY

7. *Characteristics.*—The defence in close country is based on the principles laid down in Chapter XI; it has, however, the following characteristics as compared with defence in more open country.

i. *Concealment.*—It will be easier to conceal the positions occupied and so to obtain surprise; wire may also be hidden in and behind hedges, etc. By employing troops in outpost positions, the defence may be able to force the attackers to deploy prematurely; such deployment will be hampered by the conditions of the ground, whilst the withdrawal of the covering troops can often be carried out unobserved.

ii. *Use and co-ordination of weapons.*—It will be difficult to find positions which afford full scope for the use of weapons, the fire of machine guns with observation at long ranges being particularly difficult. In consequence, the fronts allotted to rifle companies will usually be less than in more open country. Work on clearing the foreground may be essential; where cover is thick and the time for preparation short, it may be possible only to clear lanes to be swept by the fire of machine guns and light machine guns.

iii. *Control*.—Control being more difficult, it will often be necessary for communications to be improved and routes marked, in order to facilitate the movement of reserves, liaison personnel and orderlies.

iv. *Immediate counter-attack*.—The immediate counter-attack will be a vital factor. A successful local penetration may soon become dangerous to the defence, owing to the difficulty of locating the limits of the hostile gains and of checking by artillery fire the movements of enemy reinforcements.

88. The attack on woods

1. *Methods of attack*.—In attacking woods, it is difficult to ascertain the exact positions which are being held; good co-operation between the artillery and infantry is therefore not easy to achieve. The rate of advance in woods is also slower than in the open.

In the case of small woods on the line of advance, it will generally be best to outflank and surround them, their garrison being neutralized meanwhile by fire or smoke, and then to proceed to clear them of the enemy.

If the wood is too large for this to be possible, the attack may be directed through the wood.

A combination of these methods may be used, but it presents the difficulty of co-ordinating the rates of advance inside the wood and in the open. In such cases troops advancing in the open must be responsible for the protection of their own flanks and will provide flanking parties to establish posts on the edges of the wood as their advance proceeds.

2. *Attack on a small wood*.—The attack on a small wood should be directed from a flank, if possible. The edge of the wood should be kept under a heavy fire while the rifle companies advance on one or both sides, protecting their own flanks. This movement may be covered by tanks working along the sides of the wood. In the meantime automatic weapons should be disposed to cover the exits of the wood, to prevent enemy reinforcements reaching it and to cut off the retreat of the garrison. If it is necessary to drop flanking posts, platoons from another company should be attached to forward companies for the purpose, so that the forward company commander may have his company complete on reaching the objective.

On passing the wood, the forward companies will gain touch on the objective. The wood will then be cleared by a complete unit or sub-unit as a separate operation.

ATTACK ON A LARGE WOOD

3. *Gaining the edge of the wood*.—In the attack on a large wood, successive objectives should be fixed and the attack carried out methodically on each objective in turn. The first objective is the edge of the wood and the operation is similar to the attack on any other position. It should be remembered, however, that salients may be useful to the defence for flanking fire and can themselves be easily protected by cross fire. It is therefore generally advisable to subject them to heavy bombardment and to attack the intermediate portions, which may be less strongly defended.

Once the wood is reached, immediate steps will be taken to get the troops in hand and to guard against counter-attack. Patrols will be sent forward at the same time to reconnoitre the wood and to maintain touch with the enemy.

4. *The advance through the wood*.—In an attack through a wood, the main difficulties of the attacker are to maintain direction, to keep control, to keep touch on the flanks and to avoid being surprised and ambushed. It should also be remembered that the commander will be able to obtain little or no information by direct observation and must rely on reports sent back from the leading troops.

To maintain direction, compass bearings are essential and the line of advance must be checked frequently. To keep control and to ensure that touch is being maintained, the advance will be made methodically by bounds from one side or clearing to another.

Once inside the wood, infantry will make the best possible use of its own weapons to gain ground. Rides running parallel to the line of advance should be avoided by the forward sections, which should move through the wood just clear of them.

Transverse and diagonal rides, commanded by the enemy, should be crossed by sections at a single rush.

If fire is opened, it must be carefully controlled, and directed against enemy actually located. To fire in the direction of noises may be to fire on friendly troops.

5. *Formations*.—Extensions, intervals and distances will depend on visibility. The leading rifle companies should protect their fronts by means of sections extended in line, followed by section or platoon columns. In very thick woods connecting files may be necessary. The battalion reserve should move in column formation. (See also Infantry Section Leading, 1934, Sec. 65, 3.)

6. *Artillery and mortar support*.—Artillery support will usually take the form of a concentrated bombardment before

the infantry assault, to assist in the capture of the edge of the wood. When close fighting is in progress inside the wood, the possibility of artillery support is restricted, as the artillery cannot follow the progress of the battle and the trees make shelling uncertain.

On the other hand mortars will often be valuable as supporting weapons, in view of their ability to fire at short range.

7. *Debouching from a wood.*—The enemy will probably subject the edge of the wood to heavy fire as soon as he knows that his own troops have been driven from it. It will therefore be advisable to reorganize forward rifle companies before the extreme edge of the wood is cleared, so that they can debouch into the open on the heels of the retreating enemy and get well clear of it before the bombardment opens.

89. The defence in woods

1. When woods fit into the general scheme of defence, they should be held, as they afford valuable obstacles to break up the enemy's attack, provide natural cover for the defence and give protection against tanks. On the other hand, if the enemy is likely to employ heavy concentrations of persistent gas, they may be rendered untenable by either side for days.

2. A wood which is too far in front of the position to be a serious threat to the defence should not be held, but steps taken to arrange the defences so that effective fire can be brought to bear on the exits. Patrols should be sent into the wood, and, if time permits, entanglements and obstacles prepared both inside the wood and on its near edge.

3. The defence of small copses in close country can often be effected by entangling them and commanding them from positions in rear. By this means the copses can be used to break up the enemy's attack.

4. The general system of the organization of a wood for defence normally includes :—

- i. The holding of positions either in advance of the forward edge or just inside.
- ii. Further positions in the interior of the wood.
- iii. Defences in its rear to guard the exits.

5. The front edge of a wood will probably be subjected to a heavy and accurate artillery bombardment. It is therefore usually advisable to hold it lightly with machine guns or other automatic weapons.

The outskirts of the wood should be entangled whenever time permits, and the obstacles covered by flanking fire.

6. Inside the wood the principal rides and clearings which the enemy will have to cross in his advance should be commanded by fire. Clearing the foreground will be important, and obstacles should be arranged to force the enemy into the arcs of fire of the machine guns.

Buildings inside a wood often form valuable keeps from which to command rides and clearings; but if they are situated in wide clearings where they may be subjected to concentrated artillery fire, alternative positions should be selected, to which the garrisons can move if necessary.

Anti-tank weapons will be sited to command the principal rides and clearings which run parallel to the line of the enemy's advance.

7. If the enemy succeeds in capturing the wood, every effort must be made to prevent him exploiting his success. With this object in view, defences will be organized in rear so that, if the enemy attempts to debouch, he will be engaged with fire.

90. The attack on villages

1. *General principles.*—The general principles governing an attack on a village are similar to those for attacks on woods (see Sec. 89). If the village is small, it will often be advisable to pass it on either side and so isolate the garrison. The village can then be dealt with by attack from a flank.

If it is necessary to attack a town or village directly, it should form a distinct objective, for the capture of which a definite formation or unit should be allotted.

Fighting amongst houses and clearing cellars is slow and exhausting work. The delay which may be entailed in capturing a village should not, however, be allowed to retard the progress of the troops on either flank; any gap that may be caused in the front when the attack has passed beyond the village may be filled by a fresh body of troops from the reserve.

2. *Method of attack.*—When the village or town is of any size, it should be divided into areas, for the capture of which separate sub-units should be detailed. Each area in turn should be subjected to an intense bombardment before the infantry assaults; and will be consolidated and "mopped up" as soon as it has been captured; barricades will be erected on cross roads, and all commanding buildings put in a state of defence.

3. *Conduct of attack.*—It will be important to maintain the momentum of the attack and to allow the enemy no time to rally. Once a platoon has captured a locality, it will establish itself in the buildings which command the roads and open

spaces, and be ready to meet a counter-attack; its place in the advance will be taken by another platoon, which should pass beyond it and take up the fight.

When moving down a street, infantry should be preceded by an advanced party. Movement should be in single file on both sides of the street and close up to the houses, men being detailed to watch the windows and doors on the opposite side. Streets should not, however, always be used as lines of advance, and casualties will often be saved by moving through backyards and gardens. A small rear party should be detailed to watch windows and doors after the others have passed. In this type of fighting mortars and grenades, both smoke and H.E., can often be used most effectively.

Field artillery may also be used in close support, particularly when the fire of the defenders is preventing access to a street; to be effective, the guns will usually have to be employed at very short ranges.

For further details, see Infantry Section Leading, 1934, Sec. 67.

91. The defence of villages

1. A town or a village should be allotted a complete formation or unit as its garrison.

2. Villages, even after they have been destroyed by shell fire, give cover and shelter to the defence and are difficult to attack.

3. On the other hand, small and poorly-built villages without cellar accommodation may become shell traps. In such cases, where the ground in front of the village can be covered by fire from the flanks, it is advisable to site the forward defences to sweep the approaches with enfilade and oblique fire. By this means the village itself is used as an obstacle to break up the attack.

Fire positions should also be organized in rear of the village to prevent the enemy debouching from it.

At the opportune moment a counter-attack can then be launched to eject him.

4. In the case of a large village, the forward defences should usually be sited in front of it, so as to escape the effects of a bombardment directed at its outskirts.

Within the village defences should be sited in buildings which command roads and open spaces. Such buildings should be loopholed, windows sandbagged and cellar accommodation strengthened; communications should be improved by knocking holes in the walls between houses and gardens, so that movement is possible without entering the streets.

Engineers should be detailed, when possible, to assist the infantry in this work.

Cross roads, village greens and market squares should be specially strengthened by barricades or trenches on the near side to take advantage of the field of fire afforded. Localities, or keeps, will also be organized for protracted defence and allotted a definite garrison; they will often prove of great value in breaking up an attack, and will also facilitate the re-capture of the village by counter-attack.

A co-ordinated scheme of anti-tank defences will be required. By means of demolitions, mines, etc., it may be possible to confine the enemy tanks to certain avenues of approach and thus to simplify the task of the defence.

5. The danger of disorganization in street fighting is great; subordinate leaders will retain control and keep their men in hand.

Special report centres should be established at central points known to all the defenders.

CHAPTER XV

THE PASSAGE OF WATER OBSTACLES

92. General considerations

1. *General.*—The tactical considerations affecting the opposed crossing of water obstacles are discussed generally in Field Service Regulations, Vol. II, 1935, Sec. 58. This chapter deals in greater detail with the infantry crossing.

2. *Preparations.*—The necessity to force the passage of a water obstacle will seldom be unforeseen and some details of the obstacle will generally be available, while information from the air and mobile troops may give warning whether it is likely to be defended or bridges have been damaged. It will therefore usually have been possible for preliminary plans to have been made before the obstacle is reached, for the most suitable areas for the crossing to have been selected and for the necessary equipment to have been sent forward, so that it will be immediately available when and where required.

3. *Means available.*—The passage of the leading troops can be made by one of the following methods or a combination of them :—

- i. *Utilization of existing resources, e.g.,* fords, locks, intact or demolished bridges, local boats, etc.
- ii. *Service equipment, e.g.,* folding boats or Kapok equipment.
- iii. *Improvisation, e.g.,* rafts and other means.

4. *Utilization of existing resources.*—The greatest success will often be obtained and vital time saved by utilizing some existing means of crossing, for example a bridge incompletely demolished, a footbridge overlooked by the enemy in his demolition plan (perhaps not marked on the map) or boats left on the near side of the river. Enemy demolition parties may also be surprised and driven off with their work incomplete. It is therefore essential that the leading infantry approaching a river should act with energy and resource. The whole line of a river on the front of a unit should be searched by patrols and information of any opportunity for crossing should be passed rapidly, so that the chance may be exploited by reserves.

5. *Service equipment :—*

i. *Folding boats.*—The folding boat equipment (F.B.E.) is the only form of assault equipment carried in the infantry division. The boats may be used for the initial assault crossing as single boat ferries, and later may be joined together to form rafts or light bridges for the passage of transport. When used as ferries, each boat will carry 25 armed men in addition to its crew of one N.C.O. and four oarsmen.

The number of boats allotted to each crossing place will depend on the enemy resistance anticipated and the estimated time taken by each boat to make the return trip.

In principle, the operation and navigation of the boats is an engineer responsibility, but infantry should be prepared not only to supplement the engineer rowers but also, if engineers are not available, to carry out the whole operation unaided; previous training in watermanship is thus essential. If engineers are present, they are responsible for the technical control of the equipment; the tactical control of the crossing is, however, the responsibility of the infantry commander.

If it is intended that after being used as ferries, the boats shall be employed for the formation of rafts or bridges, there should be no great distance and no obstruction in the river which would prevent the boats being rowed from the ferrying sites to the bridge or rafting sites. The decision as to when and how boats are to be withdrawn from ferrying will rest with the infantry commander. The latter will, however, act in close consultation with his engineer commander, as the time by which the folding boat rafts or bridge can be put into operation may depend on the rate and manner of handing over the single boat ferries to the engineers.

ii. *Kapok equipment.*—Kapok assault equipment is carried in the bridging company, R.A.S.C. It is suitable for the assault bridging of slow-running streams up to 150 feet in width with low banks. It is less adaptable and less easy to handle in close country than single boat ferries and it requires large carrying parties; but, under favourable conditions, it is the most rapidly made bridge and can effect the continuous and speedy passage of assaulting troops in single file over a water obstacle.

Though Kapok bridging operations can be carried out by infantry unaided, engineers should be made available whenever possible for technical advice and assistance, particularly if technical difficulties with regard to banks, the swiftness of the stream, etc., are anticipated. The engineers are responsible for delivering the bridging equipment to the infantry in accordance with the allotment orders for the bridge after the leading infantry has passed and often for dismantling it when

no longer required. Further particulars of Kapok equipment are given in the Manual of Field Engineers, Vol. I (All Arms), 1933, Chapter XVI.

iii. *Comparative advantages of Kapok and folding boat equipment.*—The decision whether Kapok assault bridges or folding boat equipment or a combination of the two will be used for a particular operation will depend on a number of factors, including the following :—

i. *Nature of the river.*—If the river is over 150 feet in width, the banks steep or the current swift, the launching and maintenance of an assault bridge presents considerable difficulties. A damaged bridge over a wide and swift stream takes time to repair, during which the passage of troops will be held up. For crossing narrow slow-running streams or canals Kapok will generally be the more suitable equipment.

ii. *Rate of crossing.*—It may be taken as a general guide that one Kapok bridge will allow for the passage of the same number of men in the same time as will seven single boat ferries. No exact figure can be given, as it depends on the effect of the width and navigational difficulties of the stream on the time taken for the return trip of each ferry.

iii. *Points of passage.*—Whereas the Kapok bridge will allow passage at a restricted number of points, the boats are able to pass men over at many points over a wide front.

iv. *Carrying.*—It is advisable for the Kapok equipment to be launched by men other than those who are to cross first, whereas the folding boats can generally be carried to the water by their assaulting troops and crews. In close country the carriage of folding boats is simpler.

v. *Speed.*—Folding boat equipment can be more rapidly prepared for launching than a Kapok bridge.

vi. *Flexibility.*—In the event of a change in the situation, it is easier to change the point of passage of single boat ferries.

Consequently, where both Kapok and single boat ferries are available, it may be advisable to launch the Kapok after the first flights have passed across by single boat ferries and the far bank has been seized. Reserves can then cross by Kapok and the boat ferries can be quickly made available for forming into rafts or light bridges, and the passage of supporting arms will thus be expedited.

6. *Improvisation.*—In the absence of service equipment, it will often be necessary to improvise a means of crossing; for example :

i. In shallow water wagons or carts may be used to form the structure of a bridge.

ii. Small gaps may be filled with bundles of brushwood.

iii. Barrels, petrol tins, oil drums, etc., may be used for making piers or floats for bridges or rafts.

iv. Rafts may be made of waterproof material such as tarpaulins, ground sheets, etc., stuffed with straw, heather or ferns.

v. A rough boat can be made by covering the body of a wagon with a tarpaulin sheet, or by fastening a tarpaulin over a light framework of planks nailed together.

vi. Floating plank bridges may be made by lashing planks together.

While such expedients are in principle an engineer responsibility, few of them should be beyond the capabilities of an infantry battalion. Advice on their construction is contained in the Field Service Pocket Book, 1932, Sec. 28. Kapok equipment may also be employed for the construction of rafts if bridge-building is not feasible.

93. Tactical considerations

1. *Surprise.*—In the passage of a water obstacle surprise is the essence of success and is the governing factor in the preliminary plan. It will, however, seldom be possible to achieve more than initial tactical surprise. Preliminary reconnaissance and preparations should be concealed, and every effort made to deceive the enemy; obvious crossing places which may be easily and quickly bridged are often more difficult to cross on account of hostile fire than places less easy for technical reasons. To assist in gaining surprise, every device will be employed to bluff and deceive the enemy as to the point of crossing. This may be done by obvious reconnaissance or registrations on other portions of the front or by similar means.

2. *Crossing places.*—Apart from technical considerations the assault should take place, in principle, on as wide a front as possible and at as many places as the equipment available will permit. Crossing places should be sufficiently far apart to ensure that the premature disclosure of one crossing place will not necessarily result in loss of surprise at other points; they should, however, be near enough to each other to make co-operation possible between the various assaulting parties soon after the crossing.

3. *Zero hour.*—The following are the more important factors affecting the selection of zero hour :—

i. *Surprise*.—A night crossing may favour surprise, but if the situation does not admit of delay, a day crossing may be necessary covered by smoke and supporting fire; on other occasions fog, mist or weather conditions may present a favourable opportunity.

ii. *Exploitation*.—Light is necessary for the main advance subsequent to the crossing; there are advantages in this exploitation taking place just as it is beginning to get light, when assaulting troops can see to advance but there is insufficient visibility for the defenders to fire with accuracy.

iii. *Delays*.—Time should be allowed for delays, which are likely to occur during an assault crossing, particularly by night.

iv. *Enemy resistance*.—Ample time will be allowed for the capture and consolidation of initial objectives and for the passage of adequate reserves before exploitation is attempted. This time may depend on the strength of enemy resistance anticipated.

4. *Choice of objectives*.—In principle, the attacker should aim at going forward as rapidly and as deep as possible. The depth and extent of the initial objectives will depend on the anticipated enemy resistance, the width of the obstacle and the facilities for crossing available, on which will depend the attackers' available strength. If the obstacle is narrow and the enemy resistance weak, sufficient boats or bridging will often be available for reserves and supporting arms to cross over with such speed that the impetus of the attack can be maintained without any appreciable halts on intermediate objectives. In such cases the advance of the leading troops of the assault will automatically cover the passage of the reserves. If, however, conditions are less favourable, it will be necessary to establish a bridgehead to cover the crossing of reserves before the advance can be continued.

In a night crossing the depth of the initial objectives will also be limited by the extent to which the advance is considered possible without loss of control. In any case the choice of objectives should aim at the crossing sites being protected from aimed small arms fire and should allow for sufficient space for the local reserves to deploy after crossing (see also Sec. 94, 4).

5. *Phases of the crossing*.—In the crossing of a water obstacle the following are the phases which may have to be considered :—

- i. *Detailed ground reconnaissance* and the making of plans.
- ii. *Preparation*, including the forward movement and concealment of troops and assault bridging material or boats,

the preparation of such equipment, arrangements to deceive the enemy, organization of communications and the movement into position of the longer ranged weapons for the production of covering fire.

iii. The *infantry assault*, including the launching of bridges or boats, the passage of the attacking troops and the capture of objectives to cover the passage of reserves preparatory to exploitation.

iv. *Exploitation* to a depth that will facilitate the passage and freedom of manœuvre of the remainder of the force.

v. The passage of the remainder of the force.

94. Reconnaissance and preparation

1. *Preliminary*.—Even before the obstacle is reached, it may be possible to prepare plans in considerable detail from maps and air photographs; from reconnaissance reports from the air, mobile troops and patrols; by questioning local inhabitants and from technical data from engineer intelligence records. The study of air photographs, particularly, will often suggest likely crossing places and show that other places are unsuitable, by disclosing ditches and other obstacles on both sides of the river.

2. *Reconnaissance for night assault*.—If the crossing is to be made at night, it may only be possible before dark to carry out a general survey from some position under cover at some little distance from the actual river. In such cases reconnaissance personnel should be ready, as soon as the failing light covers their movements, to move to the river bank and decide the exact positions for crossing.

3. *Reconnaissance parties*.—As in any other operation, reconnaissance by all arms will be necessary and will be carried out in accordance with the principles described in Chapter VII; but as the infantry and engineer aspects are so closely connected in this type of operation, it is of importance that the infantry commander concerned should ensure proper co-operation between these two arms from the start by arranging for combined infantry and engineer reconnaissance throughout all stages down to the reconnaissance by the most junior officers.

4. *Details of reconnaissance*.—The commander of the unit or formation concerned has first to decide on the general areas for the crossings. Detailed reconnaissance will then be necessary, some of the points for consideration being as follows :—

i. *Crossing places*.—Information about the river will be required on the following points :—width, depth, current,

nature and slope of banks and bottom, islands, sandbanks, ditches or other subsidiary obstacles on both banks, fords, weirs, locks, liability to tidal or other changes. Selection will be made of suitable points of passage for the type of assault equipment to be employed.

In choosing these points consideration must be given to the facilities for enemy resistance on the far bank. A re-entrant bend may be difficult for the enemy to hold, but may present disadvantages for a further advance by making it easier for the enemy to localize the attack. A sharp rise or a wood close to the far bank may make it difficult for the enemy to oppose the crossing with anything but close range fire and may provide cover for reorganization after crossing. (See Sec. 93, 2 and 3.)

ii. *Objectives.*—The ground on the far side should be studied with a view to the choice of suitable objectives, including facilities for forming up and deploying troops on the far bank on a clearly defined line and, if possible, under cover; the suitability of the ground for bridgehead defence and for exploitation should also receive consideration. (See Sec. 98, 4.)

iii. *Forming up places.*—These are selected where folding boats are opened and carrying, rowing and assaulting troops are formed into their final order for assault. These positions will be accessible to the crossing places but should be protected from air and ground observation and far enough from the enemy to escape detection by sound. The opening of the folding boats makes considerable noise.

Where Kapok bridging equipment is used, such points are termed "*bridge-forming points*," at which the equipment is joined together into bridge. For the assembly of Kapok material a length of smooth ground, not less than the length of the bridge, and a clear run down to the crossing place are essential.

iv. *Approaches.*—Particularly when bridges and boats have to be carried forward to the crossing places in darkness, the route between the forming-up place, or bridge-forming point, and the crossing place should be free of obstacles and should be clearly marked by the reconnoitring party by tape or other means. While a Kapok bridge can be carried over uneven ground, lateral play is very limited; approaches must therefore be as straight as possible. An estimate should be made of the time, labour and stores required for clearing and marking these routes.

v. *Off loading points.*—It is the duty of the engineers to transport and deliver equipment as far forward as their M.T. vehicles are able to go with due regard for secrecy. The position selected is known as the off-loading point and will

be chosen as close as possible to the forming-up place or bridge-forming point, with which it may even coincide.

vi. *Assembly positions*, at which the assaulting units assemble. For the sake of security assembly positions should be well away from the water obstacle, and protected from ground and air observation.

vii. *Arrangements for covering fire.*—The greatest measure of success is likely when the crossing can be carried out silently without the employment of covering fire. It will, however, generally be necessary for covering fire to be available at short notice should surprise fail. In a day crossing the arrangements made will be similar to those for a normal attack. If the crossing is by night, covering fire will normally be delivered by rifles and light machine guns from the near bank (see Sec. 95, 5). As troops covering the crossing will be in ignorance of the position of the enemy, they will be able to fire only at the flashes of his rifles and machine guns. In addition, to ensure that their fire does not fall on the assaulting troops, they will be close to the crossing places, where they can watch the progress of the troops which they are covering. When details of the enemy defences are known, arrangements may also be made for artillery and machine gun supporting fire to be opened on centres of resistance as soon as surprise has been lost; in such cases the fire plan will be co-ordinated with the estimated rate of the infantry advance.

95. The assault

1. *General.*—As a result of reconnaissance and the further development of the situation, the outline plan will be confirmed or modified, and amplified in detail. The preparations will include the clearing and marking of routes and forming up places and the improvement of approaches.

2. *Distribution of troops.*—The troops taking part in an opposed river crossing are usually divided into the following categories:—

i. *The bridging party* (when Kapok equipment is used), which assembles, carries, launches and provides a party to maintain the bridge.

ii. *Boat carrying parties* (when folding boat equipment is used) which open, carry and launch the boats and include personnel required for crews. They will themselves (except crews) generally be assaulting troops.

iii. *Covering parties*, which protect the bridging or boat carrying parties and assaulting troops.

iv. *Assault troops.*

v. *Reserves.*

3. *The Kapok bridging party.*—It is the duty of this party to carry the equipment from the off-loading point to the bridge forming point and to construct, carry forward and launch the bridge, though a few engineers may be attached to the infantry to give advice and expert assistance. Details of their duties are as follows:—

i. *Preparation of material.*—On arrival at the bridge forming point, the material will be stacked as shown in the Manual of Field Engineering, Vol. I (All Arms), 1933, Plate 43.

ii. *Assembling the bridge.*—Details of the material required for a bridge of given length and the drill for constructing, carrying and launching the bridge are laid down in the Manual of Field Engineering, Vol. I (All Arms), 1933, Sec. 62. When the width of the gap can only be estimated, the bridge should be made up longer than the estimated width; if it is too long, the spare bays can be detached when the forward end has been secured. In order to allow for damage by hostile action 25 per cent. spare equipment should be available at forming up places. For crossing by night, if the slats are not whitened, tracing tapes should be laid along the outer edge of the trench-boards. The greasing of joints will do much to lessen noise, when the bridge is carried. Whenever possible, the bridge should be formed in daylight, as this can then be done with less noise and it is easier to check that it is complete in all respects. One securing pin insecurely fixed will jeopardize the whole operation. It is a great advantage if the bridge forming party can be given previous practice in building, carrying and launching the bridge.

iii. *Carrying the bridge.*—When construction is complete, the bridge may be lifted and carried forward as a whole. The joints over each float allow of the bridge being carried over uneven ground, but it is essential to keep the bridge as straight as possible, since the joints allow very little lateral play. Changes of direction can be made by wheeling the bridge as a whole, either on the centre or on either end, but this should be avoided, particularly at night over uneven ground.

Carrying is effected either by hand or on the shoulder, the latter being preferable when the bridge has to be carried any distance. The bridging party should be sized so that no undue weight is placed on any individual, and care taken that all move together in the required direction without noise or confusion.

If the bridge is carried on the shoulders, it must be lowered into the hands before it is launched.

The bridging party will include men detailed as spare numbers, especially when the carry is a long one. Rifles will be slung.

The route or routes from the bridge forming point to the points of passage will be cleared and marked. In addition, guides may also be required.

iv. *Launching the bridge.*—Launching is usually effected by pushing the bridge endways directly across the stream, or, if there is a current, with the forward end pointing slightly up-stream. The bridge is guided, as it is passed from hand to hand, by one or two pairs of men, who should stand in the water as far away from the near bank as possible.

One or two men of the bridging party will travel across the stream on the forward end of the bridge, to effect a junction with the far bank and to secure the end of the bridge.

Where there is a very strong current, it may be necessary to pull the bridge across from the far bank, in which case arrangements will be made for a few men of the bridging party to cross in advance by swimming or wading.

v. *Action subsequent to launching.*—Bridging parties should have definite orders as to their action subsequent to the successful launching of their bridge. Normally they will be responsible for providing a party for the maintenance of the bridge, and its repair in case of damage.

All personnel, other than the maintenance party, should clear away from the bridge as soon as it has been launched. The maintenance party will be divided into two, half on each bank; they should remain clear of the bridge but be prepared to remedy immediately any defect or repair any damage that may occur. A party should keep watch above the highest up-stream bridge to divert floating objects which might destroy the bridge down-stream.

4. *Boat carrying parties.*—The duties of the boat carrying parties are to assist in opening the boats, to carry them forward and to launch them. They may also be responsible for the provision of the boat crews (one N.C.O. and four men) if crews are not provided by the engineers. Before leaving the forming up place it will be ensured that the equipment of the boat is complete. Each boat requires a minimum of 12 men to carry it, and, to avoid congestion on the near bank, it will often be advisable for the carrying party, other than the crew, to consist of troops detailed from leading sub-units in the assault.

5. *Covering parties.*—Covering parties will be in position before the assault equipment leaves its forming up place; they should be allowed ample time for the movement and should not rush to their positions simultaneously with the bridging or boat-carrying parties. Their positions will be carefully reconnoitred. Some time before the crossing they

should be assembled under cover near the river, and should move forward to their positions shortly before the bridge is launched. They will not open fire, except on a pre-arranged signal, or to protect the assaulting troops which they are covering.

It may be necessary for a portion of the covering party to be conveyed to the far bank before the bridge is launched. These men may have to swim, helped if possible by extemporized floats, or they may have to be ferried across. In such cases the remainder of the covering party may be the first to cross the bridge once it is launched, unless they are required in positions on the near bank. The crossing of covering parties before zero should as a rule be carried out only on the authority of the commander of the whole operation, as the crossing of isolated parties may destroy the possibility of surprise.

6. *Assaulting troops.*—Assaulting troops should be ready to cross the moment the bridge has been established or the boats launched.

The leading troops detailed to cross, unless acting as carriers, will remain under cover until all is ready for crossing, arrangements being made to communicate this information by a pre-arranged signal. The importance of good traffic control cannot be over-emphasized; there are dangers of congestion, especially on the near bank, or, if troops are not fairly close, of touch being lost. A system of control posts and connecting files is necessary, in order to ensure that the forward movement of troops can be properly regulated and, if necessary, stopped altogether should the situation at the bridges demand it. An officer will be detailed to each crossing to ensure that the troops do not bunch in its immediate vicinity before crossing.

Once the far bank has been reached, it is essential for section and platoon commanders to gain control of their sections. Each platoon, as it crosses, should be collected before moving forward to its objective; an officer should be specially detailed to cross with the leading troops to ensure that sections concentrate as they arrive, and move off in the right directions.

7. *Action after crossing.*—Once the far bank has been reached and sub-units have been reformed and are under control, they should move forward to their objectives (*see* Sec. 93, 4). Before the crossing some troops will be detailed to clear the bank of enemy troops in the vicinity of the crossing places, and arrangements will be made for assaulting troops at adjacent places to gain touch with each other.

Platoon commanders should have compass bearing to ensure that direction is kept, and the attack from the bridge-

head will be carried out under the same principles as a normal attack, the method depending on the degree of enemy resistance expected.

If the crossing has been successful in some places but not in others, troops where success has been gained should be detailed to work to the flanks, with a view to facilitating a second attempt at places where the crossing has not at first succeeded. Covering and bridging parties at such places must be ready to co-operate and to make use of what may be fleeting opportunities.

8. *Reserves.*—The plan should be sufficiently flexible to allow for the passage of reserves at any point where the crossing is successful.

9. *Passage of transport.*—It is important that "A" echelon of the first-line transport of assaulting troops should cross at the earliest possible moment.

Although vehicles cannot cross by single Kapok bridges, they may get across by light bridges, rafts or folding boats, or may be floated across in tarpaulins. Engineer advice should be taken, when possible, on the best method to be employed; but in the absence of engineer assistance infantry must be prepared to improvise means of crossing without assistance.

APPENDIX I

SYLLABUS OF TRAINING AT AN INFANTRY
DEPOT OF A RIFLE BATTALION

(See Sec. 9.)

1. The object of depot training is, in the shortest possible time, to develop the recruit's mind and body and to send him on to his battalion resourceful, alert and fit, with a high sense of discipline and self-respect, well grounded in weapons and elementary tactics and thus ready to receive further instruction.

In order to achieve this object, certain qualities must be developed or imbued in each recruit by the syllabus. These are :—

<i>Qualities</i>	<i>Subjects taught primarily to develop these qualities</i>
i. Physical fitness and capability to co-ordinate brain and limb.	Physical training, drill and recreational training.
ii. Intelligence and initiative.	Educational training and field craft and cultivation of individuality at all times.
iii. Confidence and proficiency in his arms.	Weapon training, anti-gas training and fieldcraft.
iv. High morale, self-respect, self-reliance and resource, but incorporating immediate and willing subordination to authority.	Educational training, interior economy. Organized recreational training and drill, and P.T.

The course of recruit training is divided into two parts :—

" A "—Individual training.

" B "—Elementary collective training.

For individual training 16 weeks in the training company are allowed, at the end of which time the recruit should have completed all individual and physical training, and have fired Table A, Parts I, II, III and IV, and, if possible, have obtained his third-class certificate of education, if this can be done without cramming.

The above period will be followed by one week's elementary collective training in the training cadre, when the squad will be organized as a platoon.

Thus 17 weeks are allotted, with one spare week to allow for bad weather and to deal with casualties, in making up the total of 18 weeks' training.

2. The syllabus of individual training will include instruction under the following headings:—

- i. Development of moral qualities.
 - ii. Drill—saluting, guards and sentries.
 - iii. Physical training.
 - iv. Educational training.
 - v. Weapon training.
 - vi. March discipline.
 - vii. Anti-gas training.
 - viii. Fieldcraft.
 - ix. Recreational training.
 - x. Instruction in barrack and camp duties.
- Details of this syllabus are given below.

3. It must be constantly borne in mind by instructors that every item in the syllabus of recruit training has a direct bearing on *training for war*, and this underlying object of all training must constantly be impressed on all recruits.

4. *Development of moral qualities.*—The development of the moral qualities which combine to form a soldierly spirit must be borne in mind throughout the period of recruit training. They will be fostered chiefly by the influence of the permanent staff at the depot, who will at all times emphasise in their teaching and by example that mutual trust, and a spirit of comradeship between leader and led, is the surest basis for discipline in the stress and danger of war.

Lectures by officers of the regiment will be given on *esprit de corps* and regimental history, etc.

The meaning of orders, the importance of a clean and smart turn-out, the regulations dealing with discipline, the names of their officers, how to recognize the various ranks, and the details of pay and promotion and other similar matters immediately affecting the soldier, should be made the subject of short and interesting lectures and talks during training.

5. *Drill—Guards and sentries.*—The object of recruit drill is to inculcate discipline, orderliness and a high morale.

Its purpose as a means to an end must be understood, and

in the process of drill care must be taken that individuality is not suppressed.

Recruits will be instructed in the duties of guards and sentries in accordance with the Manual of Elementary Drill (All Arms), 1935, Chapter VI.

6. *Physical training.*—

i. The object of physical training exercises is to develop the recruit's strength, mental and physical agility, and capacity for work. The recruit, on joining, is not in a fit state to undertake his work as a soldier without preparation, and purely military exercises are not sufficient to give him the necessary physical fitness. He will, consequently, be exercised in a special course of physical training conducted on the principles indicated in the Manual of Physical Training.

ii. It must be remembered that the youth of 18 is no longer so plastic as the boy. His physique will be injured rather than improved by too rapid and vigorous attempts to alter the shape and carriage of his body. The principle of progress from easy exercises of short duration to longer and more difficult exercises must always be insisted on. It must also be remembered that the performance of the various exercises is only a means to an end, and that the training is not merely for the sake of the exercises themselves, but for their ultimate effects. The value of active games and sports as adjuncts to physical training cannot be over-estimated.

iii. Instruction in physical training will be given only by fully qualified instructors.

iv. 95 physical training attendances will be performed by the recruit whilst at the depot. Attendances performed by the men as recruits are "forming squad" may, in exceptional circumstances, be allowed to count towards the number of attendances laid down. Before leaving the depot squads will be inspected at a special passing out examination (see Physical Training, 1937, Sec. 16).

v. In order to ensure that these compulsory attendances are carried out without fail during the normal period of recruit training, the daily physical training attendance will be given priority over all other forms of training. The period allotted for recruit training at the depot allows ample margin for the completion of 95 attendances.

7. *Educational training.*—The object of educational training of the recruit is to develop his mental and moral qualities so as to render him a well educated, intelligent and resourceful soldier.

All recruits should normally pass the examination for the army third class certificate of education before they leave the depot.

On arrival at the depot, they will be graded, and the members of each squad will be divided into sections according to their mental attainments, so that proper provision may be made for their progressive educational training.

All recruits will be prepared for the examinations for which their attainments fit them. As soon as a group of candidates is ready to sit for the third class certificate, an examination will be held.

Those candidates who pass will continue their studies with a view to sitting for the second class certificate of education. Those who fail should revise the work with the candidates preparing for the following examination.

All recruits should receive educational training for one hour a day. During the period in which squads are forming it may be possible to increase this time. Extra instruction should be provided for the very backward men.

Instruction need not be given solely in the class rooms. Advantage should be taken of any local facilities for visiting factories and places of interest. The time occupied in such excursions will be taken from that allotted to educational training.

These visits will develop the recruits' mental powers, and the instructors can use the knowledge gained by the men in their lessons on English and composition.

A statement of each man's educational attainments, with a note as to his state of preparedness for the next higher examination, will be sent with his documents when he leaves the depot to join his unit.

8. *Weapon training.*—The object of depot training in any weapon is to instil in the recruit the correct elements of instruction to enable him later to develop into a skilled man at arms. In order to emphasize to the recruit his own responsibility for his weapon, the rifle will be given to him very early in the syllabus, even though drill with the rifle does not begin until about the sixth week.

The sequence and scope of instruction is contained in Small Arms Training, Vol. I, Pamphlet No. 1.

9. *Marching and march discipline.*—Training in marching will be begun during recruit training and must be carried out with care; otherwise this will result in a reduction in physical strength.

Recruits should be taken out for short marches during their early training and practised in falling out and falling

in quickly (*see* Manual of Elementary Drill (All Arms), 1935, Chapter VIII).

10. *Fieldcraft.*—The object of teaching fieldcraft is to bring home to the recruit that as a soldier he must use his wits as an individual in order to help his unit defeat the enemy. The teaching of this subject will be carried out from the first to the last week, and will include instruction in the following as a preparation to further training, after joining the battalion as laid down in Chapter VII :—

Compass direction, N., E., S. and W.

Where sun rises and sets.

Names of common objects of the countryside.

Nature of country.

Varieties of crops and growth.

Features of ground.

Telegraph, telephone and electric light wires. Where found and how recognized.

Names of common trees, evergreens, etc.

Observation of country.

Memorizing of features of a portion of ground.

Use of ground.

Elementary stalking.

Cover from view and fire.

Cover from air observation.

Moving without leaving tracks.

Observation of tracks.

Battle formations and suitability.

Observation and reports.

What to report.

11. *Recreational training.*—The object of organized recreational training, apart from helping to build up the recruit's body and developing his self-control, is to teach him, while he uses his skill and intelligence as an individual, that it is the team spirit in peace and war which achieves success. Efforts must therefore be made whereby every recruit takes his part in some form of organized team competition.

12. *Anti-gas training.*—During the limited time available for anti-gas training the recruit should be taught how the respirator works, how it is looked after and how it is put on and taken off.

First fitting of the respirator by hand and eye must be carried out as early as possible and practice in wearing the respirator will be combined with other forms of training. Anti-gas training will be completed after a recruit joins his battalion.

13. *Instruction in barrack and camp duties.*—The object of this instruction is to teach the recruit a high standard of cleanliness, orderliness and method in peace, in order that he may keep his health and self-respect and obtain the maximum comfort during the difficult environment of war.

The instruction under this heading will include the laying down of kits, cleanliness, care of feet, smartness, orders, and such regulations as immediately affect the soldier.

Recruits must be given practical instruction in the fitting, cleaning and care of their clothing, equipment and boots as soon as these are issued.

14. *Standard of efficiency.*—The standard of efficiency to be attained by recruits before joining their battalions is laid down in Sec. 9, 12.

15. *Allotment of time.**—Recruit training should be so arranged as to begin with about 20 hours' work a week, gradually increasing to about 28 hours' work a week.

The following is the number of hours which it is suggested might be spent on each subject during the individual training period. The figures are given *as a guide only* and may be varied as circumstances demand:—

					hours
Weapon training †					
Rifle, less miniature range	...	...	...	...	37
Rifle, miniature range	...	...	...	...	10
Rifle, 30-yards or "open" range	...	...	...	...	12
Light machine gun, less range work	...	...	...	...	11
Light machine gun, range work	...	...	...	...	6
Bayonet training	...	...	...	...	6
Standard tests	...	...	...	...	10
Drill	...	...	...	...	94
Guards and sentries	...	...	...	...	6
Physical training	...	...	...	...	95
Educational training	...	...	...	...	75
Lectures	...	...	...	...	9
Anti-gas training	...	...	...	...	4
Interior economy	...	...	...	...	20
March discipline	...	...	...	...	8
Fieldcraft	...	...	...	...	17
					—
Hours					420
					—

* This applies to a rifle battalion depot. In machine gun battalion depots an experimental syllabus of 22 weeks is in force.

† For further details see Small Arms Training, Vol. I, Pamphlet No. 1.

A portion of the instruction in march discipline, fire discipline and visual training may be included in the collective training period.

16. *Elementary collective training.*—Elementary collective training will be carried out by the training cadre and will include:—

- i. Sec. 28 and Chapter VI.
- ii. The elements of section and platoon organization and open formations.
- iii. Section field formations (Chapter V).
- iv. Further training in fieldcraft.

A portion of the instruction in march discipline, fire discipline, visual training and fieldcraft included in the syllabus for the individual portion of recruit training may be included in this period of cadre training.

APPENDIX II

STANDARD OF TRAINING TO BE AIMED AT BY
INFANTRY OF THE TERRITORIAL ARMY

OFFICERS

1. *Up to the first two years' service.*

- i. The organization and supervision of the drill, weapon training and tactical training of his sub-unit.
- ii. The leadership of his sub-unit in the field (including the capacity to use weapons, ground and formations).
- iii. Map reading, message writing and simple verbal orders.
- iv. The administration and interior economy of his company at the drill station, in camp and in the field.
- v. Ability to teach regimental and divisional history.
- vi. Anti-gas training—in addition to a knowledge of the respirator, and of all personal and unit anti-gas equipment, a thorough knowledge of all anti-gas measures as applicable to the infantry platoon.

2. *After two years' service.*

He should be acquiring a theoretical knowledge of the handling of other arms in co-operation and should be capable of setting simple schemes. He should have a knowledge of organizing field defences as applicable to the infantry company. After two years in each rank, he should be efficient in the duties of the next higher rank.

WARRANT OFFICERS, SERJEANTS AND CORPORALS

3. *Rifle companies.*

- i. The instruction of his sub-unit in drill, rifle and light machine gun (including tests of elementary training).
- ii. The leadership of his sub-unit in the field (including the capacity to use weapons, ground and formations).
- iii. Fire discipline, fire orders, indication of targets.
- iv. The administration and interior economy of his sub-unit at the drill station, in camp and in the field.
- v. An elementary knowledge of map reading.
- vi. A knowledge of organizing field defences as applicable to the infantry platoon.
- vii. Anti-gas training—in addition to a knowledge of the

respirator, and of all personal and unit anti-gas equipment, a thorough knowledge of all anti-gas measures as applicable to the infantry platoon.

4. *Machine gun company.*

- i. Instruction in the syllabus laid down for recruits and trained soldiers in the machine gun company. (Corporals will not be expected to teach night firing drill.) (See paras. 8, 9 and 10, below.)
- ii. The leadership of his sub-unit in the field, fire control (direct fire), with a knowledge of the theory of machine gun fire and its application.
- iii. The administration and interior economy of his sub-unit at the drill station, in camp and in the field.
- iv. An elementary knowledge of map reading.
- v. A knowledge of organizing field defences as applicable to the machine gun section.
- vi. Anti-gas training—in addition to a knowledge of the respirator, and of all personal and unit anti-gas equipment, a thorough knowledge of all anti-gas measures as applicable to the infantry platoon.

5. After two years in each rank, a N.C.O. should be efficient in the duties of the next higher rank.

PRIVATE SOLDIERS

6. *Rifle company. Recruits.*

i. *Drill.*—Ability to perform all movements laid down in the following chapters of the Manual of Elementary Drill (All Arms), 1935 :—

Chapter II.—Squad drill in single rank without arms.

Chapter III, Part II.—Squad drill in two ranks.

Chapter IV.—Squad drill with arms, but excluding Secs. 69 to 72.

Chapter V.—Saluting.

ii. *Weapon training.*

Rifle.—Ability to pass the following tests of elementary training (as laid down in Small Arms Training, Pamphlet No. 3).

iii. *Tactics.*—The use of ground and cover. Section formations. Fieldcraft.

iv. *Miscellaneous.*

(a) Regimental and divisional history.

(b) Discipline and military deportment.

v. *Anti-gas training*—a knowledge of how the respirator works, how it is looked after and how it is put on and taken off.

Frequent practice in using the respirator will be combined with other forms of training.

7. *Rifle company. Lance-corporals and trained soldiers.*

i. *Drill.*—As for recruits, with in addition—

Chapter VI.—Guards and sentries.

Chapter VIII.—March discipline. Infantry Training, 1935, Sec. 22.—Platoon drill.

ii. *Weapon training.*—As for recruits, but in addition instruction up to Regular Army standard will be aimed at in tests of elementary training. Instruction should be given, when opportunity offers, in judging distance and in recognition of targets.

iii. *Tactics.*—A knowledge of tactics and organization, as laid down in Infantry Section Leading, 1934, with special reference to the use of ground and cover. A knowledge of constructing field defences.

iv. *Miscellaneous.*—As for recruits.

v. *Anti-gas training*—in addition to a knowledge of the respirator, a working knowledge of the use of all personal and unit anti-gas equipment.

8. *Light machine gun sections.*

(No man to become a light machine gunner until he has completed one year as a trained soldier in a rifle section and is able to pass the rifle tests of elementary training.)

Ability to pass the following tests of elementary training in the Lewis gun :—

No. 1. Loading.

No. 2. Adjustment of sights.

No. 3. Holding and aiming.

No. 4. Unloading without firing.

No. 5. Testing and adjusting.

No. 6. Action.

No. 7. Cease firing.

No. 8A. Immediate action.

9. *Machine gun company. Recruits.*

i. *Drill.*—As for company recruits.

ii. *Weapon training (rifle).*—As for rifle company recruits.

iii. *Machine guns* :—

(a) Elementary gun drill. A little knowledge and practice. Not up to tests of elementary drill standard.

(b) Immediate action. Not up to tests of elementary drill standard.

(c) Stripping, care and cleaning. To enable the men to look after the gun.

(d) Visual training, recognition of targets. Introduction to the methods by which machine gun targets are engaged.

(e) Aiming instruction ; machine gun signals ; ranging. Miscellaneous subjects—best taught early.

(f) Introduction to fire orders. To be carried out by giving simple fire orders (to one gun) combining recognition and a single point of aim.

From this standard a little section drill can be carried out in camp, etc., after preparatory work on collective drills during the first part of the camp.

iv. *Miscellaneous.*—As for rifle company recruits.

v. *Anti-gas training*—a knowledge of how the respirator works, how it is looked after and how it is put on and taken off. Frequent practice in using the respirator will be combined with other forms of training.

10. *Machine gun company. Trained soldiers.*

i. Elementary gun drill (including tests of elementary drill).

ii. Immediate action.

iii. Care and cleaning.

iv. Stripping.

v. Repairs and adjustments.

vi. Visual training and recognition.

vii. Aiming.

viii. Ranging.

ix. Machine gun signals.

x. Section drill (direct).

xi. Night firing (when sufficiently advanced).

Tactics.—A knowledge of tactics and organization as laid down in Infantry Section Leading, 1934. The application of ground and cover to the field duties of a machine gun section. A knowledge of constructing machine gun emplacements.

Anti-gas training—in addition to a knowledge of the respirator, a working knowledge of the use of all personal and unit anti-gas equipment.

APPENDIX III

WORKING PARTIES AND TASKS

(See *Manual of Field Engineering, Vol. I (All Arms)*)

1. *Working parties.*—In addition to the construction of its own defences, infantry will often be required to provide working parties to assist other units or sub-units in the construction of defences or as unskilled labour for a technical unit such as the Royal Engineers.

It will be important to observe economy in the employment of working parties in order not to dissipate the combatant strength of a force. This principle will be observed only if steps are taken to ensure that :—

- i. The work is properly organized and supervised.
- ii. The workers understand what is required of them.
- iii. Every available means is used to economize their strength and energies.
- iv. No avoidable delays or difficulties due to lack of proper tools, material or transport are allowed to arise.
- v. Adequate protective and administrative arrangements are made to secure the safety and welfare of working parties when going to and from work, and when at work.

When working parties are provided, there will be, as a rule, two principal officers engaged in the work :—

- (a) The engineer or other officer in charge of the work.
- (b) The officer in command of the working party.

The officer ordering the work is responsible for arranging for the provision of any protective troops that may be necessary.

2. The *officer in charge of the work* will be responsible for :—

- i. Making the preliminary reconnaissance.
- ii. Tracing out the work.
- iii. Specifying clearly what the task is, how long it is to take and what tools will be required.
- iv. Demanding the working party and supplying guides.
- v. Supplying materials and extra tools, if necessary.
- vi. The technical correctness of the design and for ensuring that the work is completed as designed.

3. The *officer in command of the working party* will be responsible for :—

i. Ensuring that his party collects the necessary tools and materials.

ii. The disposal of his men on the work and allotment of tasks.

iii. Issuing and enforcing all orders as regards the carrying of anti-gas respirators, smoking, lights, etc.

iv. The diligence of his men, and the completion of the work in the time allotted and in accordance with the design explained to him.

4. In the event of serious casualties being incurred by a working party, the *senior officer on the spot* will be responsible for deciding whether the working party should be withdrawn temporarily or whether an attempt should be made to carry out the task at all costs.

If heavy casualties are anticipated, the commander who orders the work will give definite instructions as to its urgency.

5. The *officer in command of the covering party* is responsible for its tactical disposition for the protection of the working party while work is in progress, and for making adequate arrangements for communication with the working party.

6. *Action in case of attack.*—If the enemy attacks, the senior officer on the spot is responsible and will give orders as to the action to be taken.

When working in proximity to the enemy, the working party will have its weapons close at hand for use in emergency.

7. *Demand for and distribution of working parties.*—The officer in charge of the work will make his demand for labour in terms of a definite number of workers for a specific period, e.g. 150 men for four hours. The officer who details the working party will arrange that it is composed of complete units (battalions, companies or platoons), which will provide not less than the number of workers demanded.

The officer in command of the working party will decide, in consultation with the officer in charge of the work, how best to distribute his men; this should be done by platoons and companies so that each commander can supervise the work of his own men.

The limits of each platoon and company should be clearly marked, and each guide should be shown the point to which he is to bring his party and the extent of its task.

The arrival of working parties should be so timed that no party has to wait while another is being put on its task.

8. *Distribution on the work.*—Two suitable methods of distributing parties on to excavation work are as follows :—

i. *Extending a working party from the left.*—An officer or N.C.O., prepared to pace or measure out each man's task, will stand at the left of the line on to which the squad is to be extended. The squad will be marched up in single file, at right angles to the line, and the leading man will halt when two paces from the officer or N.C.O. The latter will indicate the left of the task, and will pace out the tasks along the line of work. The second and remaining men will wheel to the right until opposite the left of their tasks, when they will wheel to the left and halt.

ii. *Alternative method.*—The leading man goes right through to the far end of the work and the remainder space themselves out behind him along the line of the work. This method takes slightly longer than method i., but it is usually necessary to adopt it in front line work.

Further details regarding the above methods, together with instructions as to the issue, carrying and use of tools, are contained in the Manual of Field Engineering, Vol. I (All Arms).

9. *Allotment of tasks.*—Work may be carried out either by:—

i. *Task work, i.e.* a definite amount of work is given to each company, platoon, section or individual.

ii. *Time work, i.e.* the working party is required to work for a certain number of hours.

Task work should be given whenever possible and each party must be allowed to withdraw as soon as it has completed its task.

It has been proved that the best work is got out of a working party in four hours—after that period the men tire rapidly.

Intensive digging.—The number of tools available, especially in mobile operations, will often be insufficient. In such cases it may be advisable to double-man the tools. (See Appendix IV, para. 1.)

APPENDIX IV

DEVELOPMENT OF FIELD DEFENCES

Diagrams and Notes

(See Manual of Field Engineering, Vol. I (All Arms))

1. *Tools.*—Carried in the battalion and company transport. Possible ways of using these digging tools are:—

i. To allot all tools to a proportion for digging, the remaining men being otherwise employed (*e.g.* sentries, wiring, clearing field of fire).

ii. To use all men on intensive digging: either some loosening and others shovelling; or working in 10-minute shifts.

iii. To work by 4-hour shifts, part of a platoon at a time.

NOTES.—1. Tools may also be pooled in the company: *e.g.* tools from a platoon on wiring may be allotted to platoons engaged entirely on digging.

2. The divisional reserve of tools is carried in the Field Park Company, R.E.

3. It pays to keep digging tools sharp.

2. *Digging tasks.*—The following are approximately 4-hour tasks in average ground:—

i. *Weapon pit.*—(6 ft. \times 3 ft. 6 in. wide at ground level \times 3 ft. deep, to accommodate two men.) One man's task; or enough weapon pits for a platoon of 20 men can be dug by 10 men.

ii. *Crawl trench.*—(3 ft. 6 in. wide at ground level by 1 ft. 6 in. deep at centre). 5 yards run by each man or 100 yards by each platoon of 20 men.

iii. *Trench.*—(3 ft. 6 in. wide at ground level \times 3 ft. deep). 2 yards run by each man or 40 yards by each platoon of 20 men.

iv. *Trench.*—(As at (iii), but developed from a crawl trench). 3 yards run by each man or 60 yards by each platoon of 20 men.

3. *Trace of trench.*—To ensure that there will be adequate protection both in the early stages and later when trenches

are developed to full dimensions, the following instructions must be followed :—

i. Straight lengths of fire bay and of communication trench should be about 10 yards long.

ii. Angles should be between 90° and 135° .

iii. Fire bays (unless at an angle as above) should normally be separated by traverses about 15 ft. long and 12 ft. wide.

NOTE.—In making calculations for connecting (directly) two points 100 yards apart :—

(a) by traversed trench (square trace), allow 150 yards of digging ;

(b) by zig-zag trench, allow 115 yards of digging.

4. Wiring.—

i. Wiring affords the quickest and most effective form of artificial obstacle. Although wire and pickets are carried in the division, their arrival must not be awaited, but efforts must be made to find materials locally.

ii. In addition to the improvement of natural obstacles (wiring hedges, between trees, etc.) the most general forms of wire obstacles are :—

(a) *Double apron fence*.—Stores required for 250 yards :—
100 long pickets, 200 short pickets and 65 coils (each 65 yards) of wire. Total man loads—115.
Task—one N.C.O. and 10 men can erect 400 yards in four hours by day and 250 yards in four hours by night.

If there is lack of time or wire, the fence may be modified by omitting some of the horizontal wires.

(b) *Cattle fence*.—This is less effective but requires less material. If put up in imitation of local custom (e.g. using stakes, etc., and running straight across fields), it should not betray the position.

(c) *Trip wire entanglement*.—This is also less effective though more economical than a double apron fence. It is, however, a form of obstacle which, in low crops, etc., may be completely concealed.

(d) Knife-rests, concertinas and French wire entanglement.

5. *Platoon commander's plan of work*.—The platoon commander should :—

i. *Be clear as to the digging policy* (see Sec. 74, 8).—Whether digging is to be limited to weapon pits which will be concealed from both air and ground observation by natural or artificial means ; or whether there is to be extensive digging (concealed from ground observation as far as practicable).

ii. *When selecting section positions*, consider also (if extensive digging is to take place) the eventual trace of the platoon locality and the problem of drainage.

iii. *In siting the wire* (if not done by the company commander) remember that it should be under fire from the section posts, that it should be beyond the range of grenades thrown by hand but not so far that it can be cut in darkness or fog ; and that it should be as inconspicuous as possible, particularly if the position consists of concealed weapon pits. (See paragraph 4, ii. (b) and (c) above.)

iv. *Make a plan of work* allotting men, tools and materials available to tasks. (In the meantime tools and materials should be collected by the platoon serjeant.)

v. *Supervise the tracing out* of digging and wire.

vi. *As a general guide*, remember that, whatever the digging policy, the first tasks to which available labour should be applied (exclusive of siting, tracing and collection of tools and materials) are, simultaneously :—

Erecting wire.

Digging weapon pits (or loopholing walls, etc.).

Clearing field of fire.

6. *Hasty defences*.—However short the time available, work on wiring and digging should be begun ; but preparations should first be made for the quick concealment of such work.

7. *Consolidation*.—The first consolidation by the foremost troops consists of reorganization and use of natural cover and shell holes.

Subsequent development will depend on the decision of higher authority as to the main position to be occupied, which will not necessarily be the high water-mark of the attack.

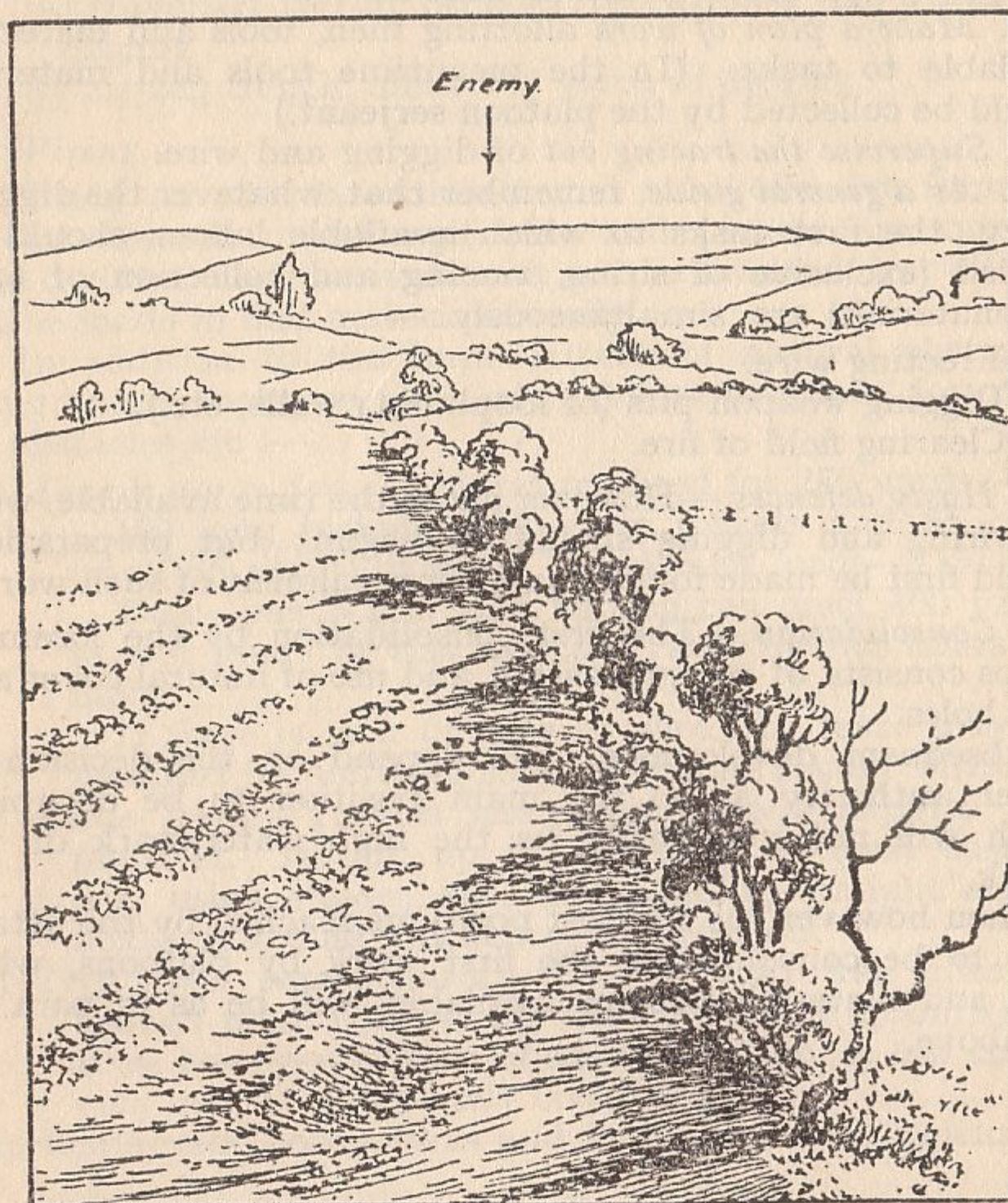
When however the furthest positions reached by the attack have to be consolidated, the first work by platoons, when tools and materials become available, will be as in para. 5, vi., above.

Diagram I.

DEVELOPMENT OF DEFENCES

By a Section forming a part of a platoon locality when air and ground concealment is intended.

(after four hours work.)



Three weapon pits have been dug and are concealed in the foreground of this landscape. A cattle fence has been put up on the right, and trip wires concealed in the turnips on the left. For location apply the tracing.

NOTES ON DIAGRAM I

1. The arc of this section can be seen from the tracing. Red arrows indicate its "most important" fire tasks, all of which the section must be prepared to carry out simultaneously. Weapon pits must be sited accordingly, i.e., facing in the direction of the "most important" tasks.

2. Both air and ground concealment are intended; therefore the section post is sited to take advantage of existing cover, and to get this it may, while still carrying out its task, lose something as a fire position, e.g. in order to gain the cover of the hedge, one weapon pit is sited where it is somewhat masked by another in front.

3. One of the "most important" tasks in this example—to cover the platoon on the left—necessitates, however, one weapon pit, for the light machine gun, being sited in the open to see over a slight rise in the ground. Special precautions will be needed to conceal this pit, especially from the air, and so that troops occupying it will not betray their position by their movements and by their tracks.

4. A further result of siting to take advantage of existing cover may be, as in this example, that weapon pits are not placed so that they can be easily joined up. Compare the siting in Diagram II.

5. The wire obstacles are such as will not betray the position: a maze of trip wires where the roots give cover; and a wire cattle fence, imitating local custom, in the grass field.

6. Tasks.—The digging and concealment of weapon pits might be done by the section commander and three of his men; and the remaining three men might form part of a company or platoon wiring party, responsible for erecting the wire shown, as well as other wire.

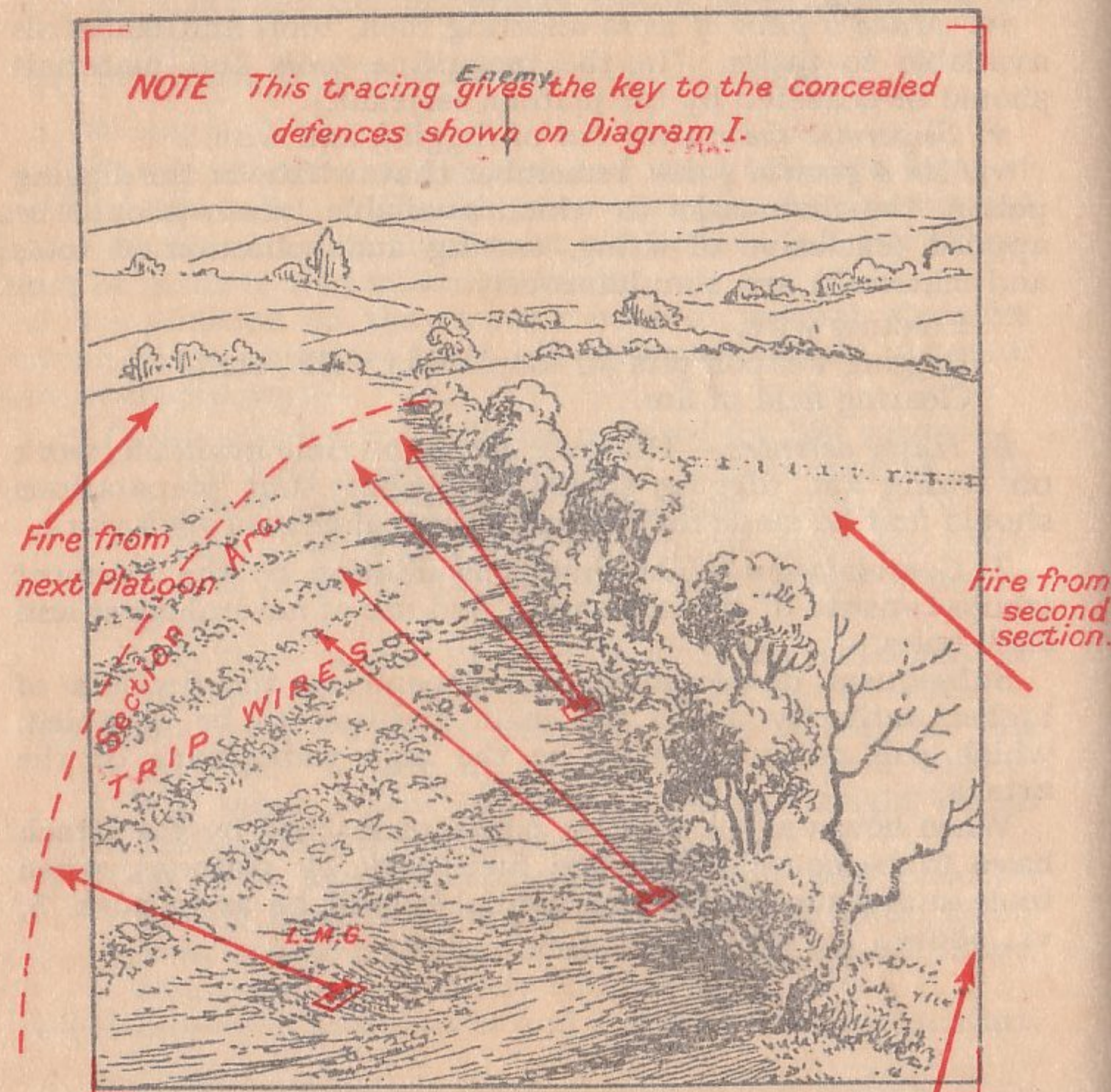
7. In some cases natural cover (e.g. a bank) may be improved, instead of digging a weapon pit; although as a rule a pit will give better protection against shell fire.

Diagram I.

DEVELOPMENT OF DEFENCES

By a Section forming a part of a platoon locality when air and ground concealment is intended.

(after four hours work.)



Three weapon pits have been dug and are concealed in the foreground of this landscape. A cattle fence has been put up on the right, and trip wires concealed in the turnips on the left. For location apply the tracing.

NOTES ON DIAGRAM I

1. The arc of this section can be seen from the tracing. Red arrows indicate its "most important" fire tasks, all of which the section must be prepared to carry out simultaneously. Weapon pits must be sited accordingly, *i.e.*, facing in the direction of the "most important" tasks.

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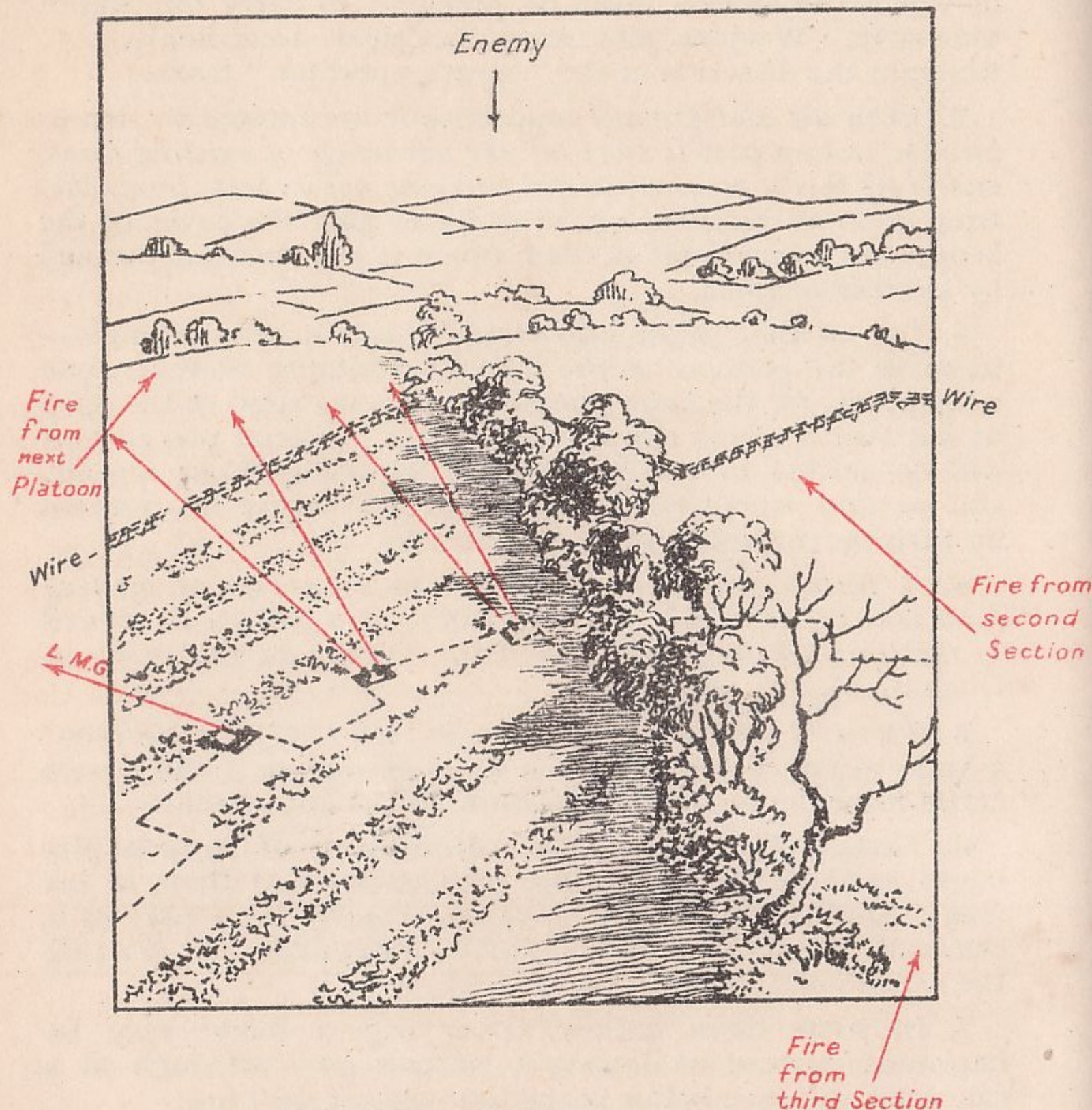
6. *Tasks.*—The digging and concealment of weapon pits might be done by the section commander and three of his men; and the remaining three men might form part of a company or platoon wiring party, responsible for erecting the wire shown, as well as other wire.

7. In some cases natural cover (*e.g.* a bank) may be improved, instead of digging a weapon pit; although as a rule a pit will give better protection against shell fire.

Diagram II.

DEVELOPMENT OF DEFENCES.

By a Section forming part of a platoon locality when extensive digging is intended.
(after four hours work.)



NOTES ON DIAGRAM II

1. The arc and "most important" tasks of the section are still as in Diagram I.

2. In this case, extensive digging having been ordered, concealment of the trenches from the air becomes impossible; and *primary consideration should be given to siting for use of weapons in accordance with the tasks allotted to the section, and to developing rapidly a continuous system of trenches.*

3. Also, even though concealment from the air cannot be gained, it is *very important to seek for concealment from enemy ground observation.* Such concealment, at least for portions of the defences, may often be obtained:—

- i. by siting in natural cover, if available: such as crops (as in this example), banks, hedges or a little distance inside a wood; or preferably,
- ii. by siting with a short field of fire: on a minor reverse slope, in a fold of the ground, a little back from the brow of a hill or screened from the enemy by a hedge, etc. But see Diagram III, Note 8.

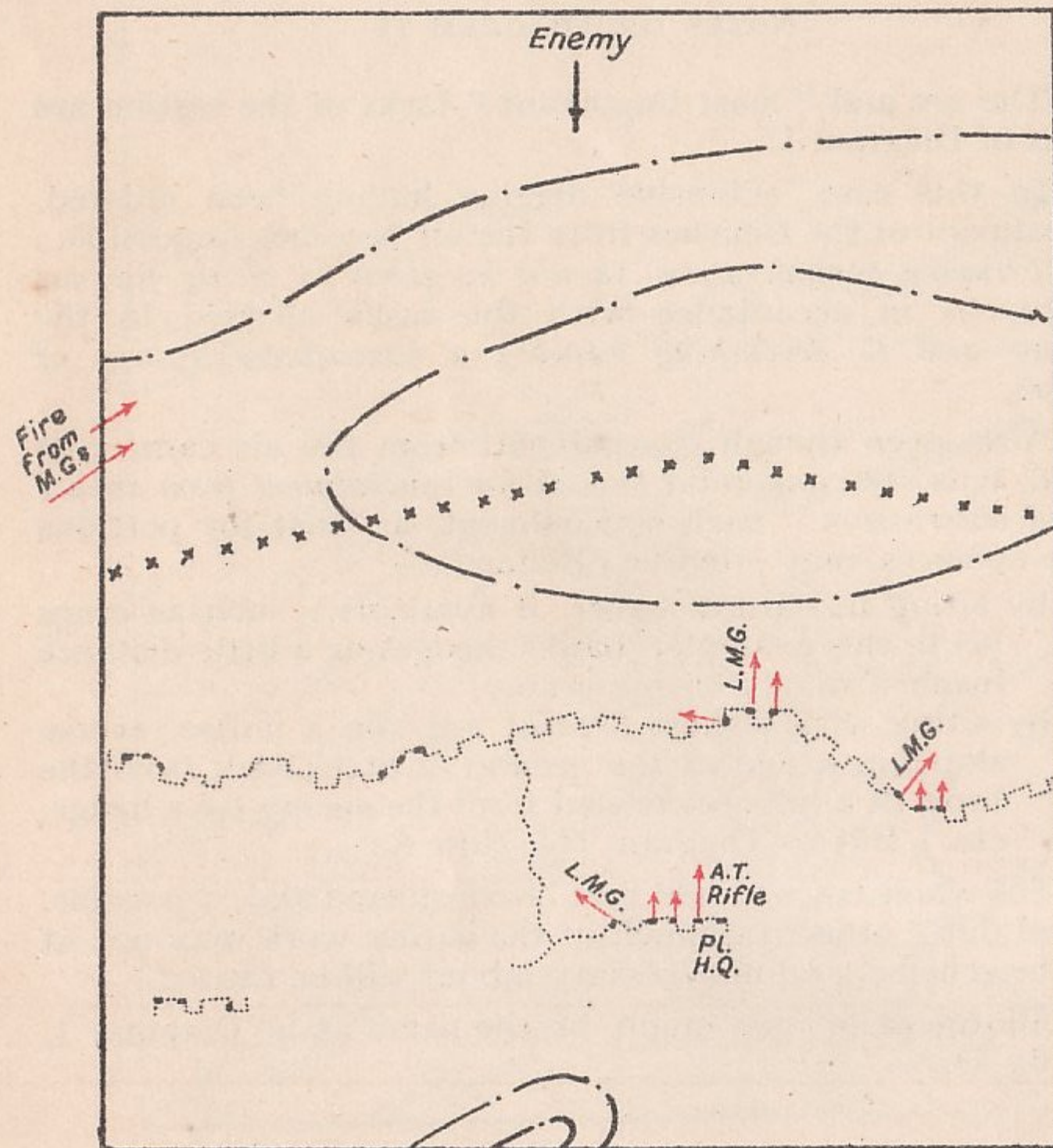
4. The whole trace should first be considered and, if possible, marked out; otherwise much of the earlier work may not fit into the scheme, and unnecessary labour will be caused.

5. Allotment of men might be the same as in Diagram I, Note 6.

Diagram III.

DEVELOPMENT OF DEFENCES.

By a Platoon when extensive digging is intended.



Weapon Pits --- Wire x x x x x
 Tracing Most important
 fire tasks ->

NOTES ON DIAGRAM III

1. The digging shown is what a platoon of 20 men can do in four hours' work. For details see Note 7, below. The wire has been put up by a company wiring party.

2. The platoon has not only dug weapon pits for its own position but also a number of intermediate weapon pits between itself and the next platoon, giving the advantages referred to in Sec. 74, 8. Even an air photograph taken now should not disclose to the enemy the tactical dispositions; and an alternative position for the platoon, or an intermediate position to be occupied at night or in fog, is provided.

3. Extensive digging having been ordered, as in Diagram II, concealment of the trenches from the air becomes impossible; and *primary consideration should be given to siting for use of weapons* in accordance with the tasks allotted to the platoon, and to developing rapidly a continuous system of trenches.

4. Also, as in Diagram II, even though concealment from the air cannot be gained, it is *very important to seek for concealment from ground observation*. In this case the platoon is screened from such observation by being sited with a short field of fire on a minor reverse slope position behind the low knoll. This is one of the methods outlined in Diagram II, Note 3, ii. There is only a short field of fire but it is adequate. If the platoon had been forward on the knoll it could have seen much further—but would at the same time have itself become much more visible. The dead ground is commanded from an O.P. on the high ground in rear, and by machine guns from a flank.

5. The platoon is capable in emergency of all round defence. From whatever direction it is attacked, fire can be brought to bear from several weapon pits without mutual interference; and the section posts can cover one another.

6. The trace of the whole platoon position should first be considered and, if possible, marked out. Time must be allowed for so doing.

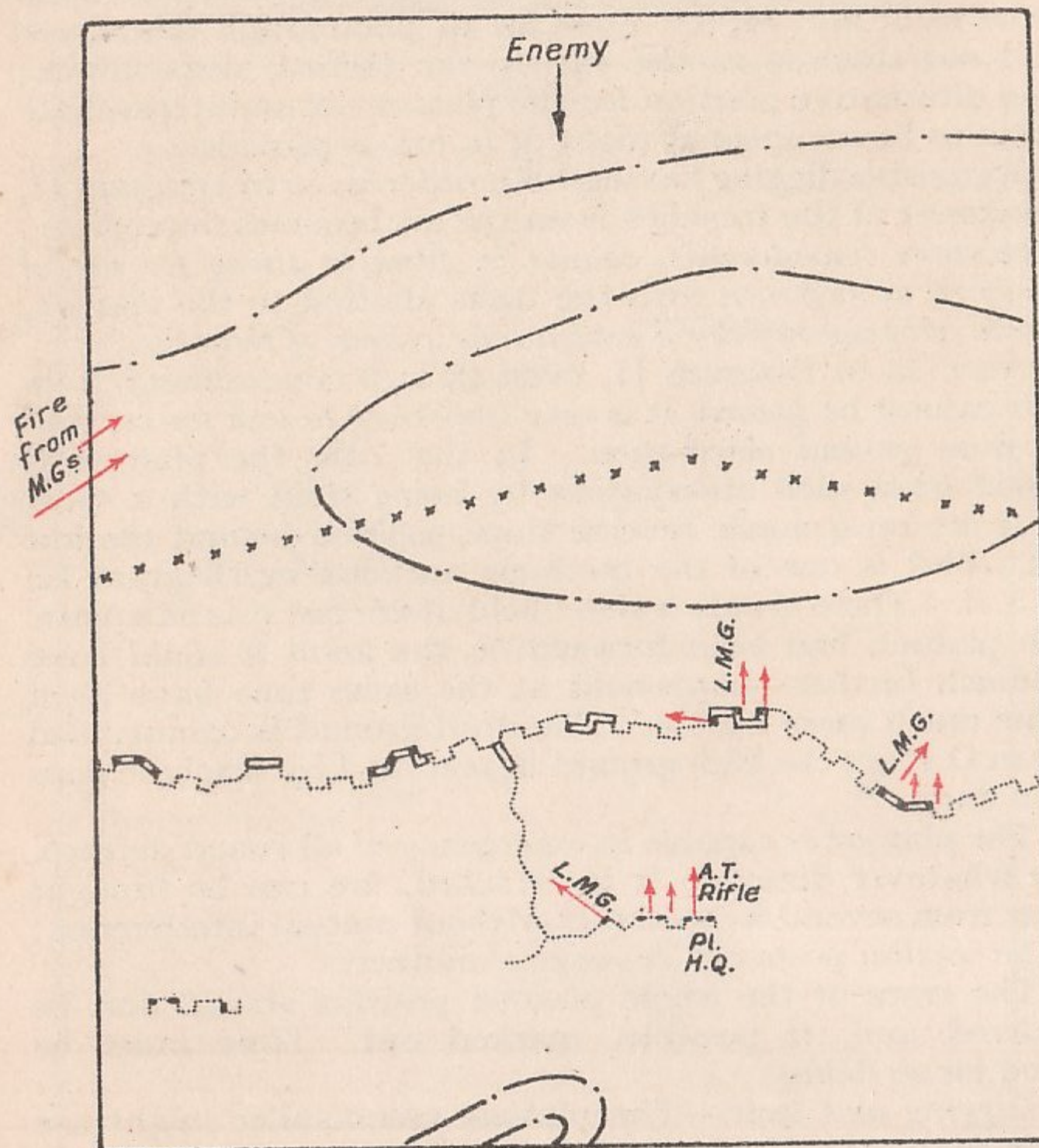
7. *Digging and tools.*—The platoon commander might use 11 men to dig the 11 weapon pits for the platoon (one man to each). If the wire is being put up by company reserves (which is usual), he can use the rest of his men to dig the intermediate weapon pits shown to the left of the platoon locality.

8. When, with a view to concealment from ground observation, a position with a short field of fire is adopted (as in this Diagram, or as in one of the other ways described in Diagram II, Note 3, ii.), it is generally advisable that the ground dead to the infantry post should be commanded from other ground in rear or flank. (See Sec. 74, 4; and Diagram V, which further illustrates this method of concealment.)

Diagram IV.

DEVELOPMENT OF DEFENCES.

By a Platoon when extensive digging is intended.



Weapon Pits .. Crawl Trench =
 Wire xxxx Tracing
 Most important fire Tasks →

NOTES ON DIAGRAM IV

1. The total digging shown represents forty 4-hour tasks. It is what the platoon itself can do in a total of eight hours' work or what a platoon, with the help of a working party from the reserves of say 20 men with full complement of tools, can do in four hours' work.

2. This Diagram further illustrates how, with good organization, an extensive system of defences can rapidly be developed. As compared with Diagram III, it shows an addition of about 100 yards of crawl trench, linking up weapon pits and in short lengths across the front.

3. In this case the next stages will be to complete the crawl trench throughout, and to erect more wire; and then to deepen to 3 ft. For possible rate of progress, see Diagram V, Note 2. Eventually the trenches will be widened and deepened to full dimensions.

4. Alternatively, in certain circumstances (for example if there was sufficient time before the enemy could gain contact), it might be preferable to dig the crawl trench throughout the system, before any weapon pits were dug. See also Diagram V, Note 8.

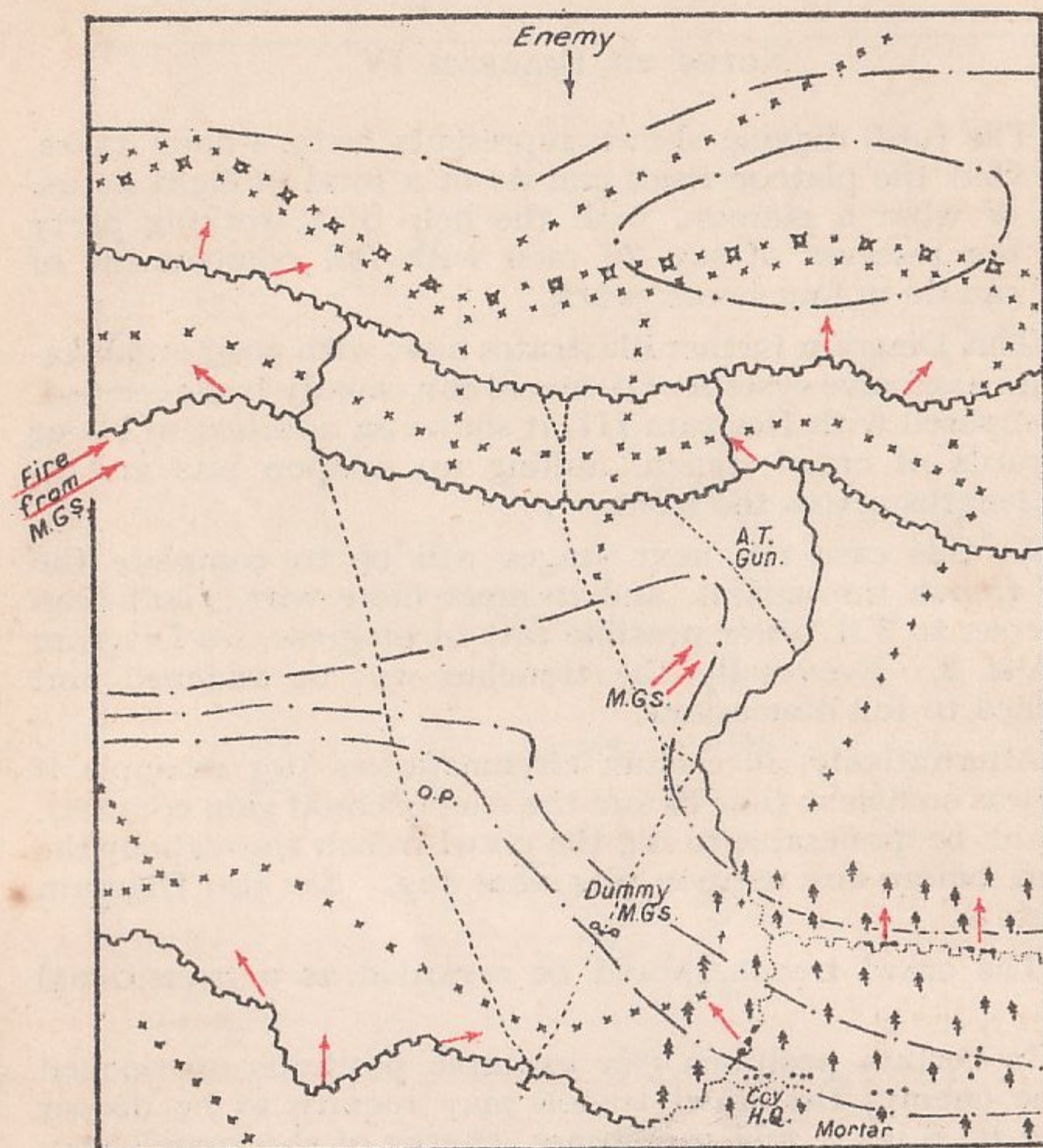
5. The crawl trench should be regarded as a transitional stage.

6. In certain positions (for example positions overlooked by the enemy) the crawl trench may require to be deeper than 1 ft. 6 ins.; and sometimes lengths of the trench may need to be dug to 3-ft. depths from the start, when development will be slower.

Diagram V.

DEVELOPMENT OF DEFENCES.

By a Company when extensive digging has been ordered.



Trench 3' deep ——— Track ———
 Weapon Pits ... Wire *****
 Tracing. A.T. Mine belt xx
 Fire tasks of L.M.G. & M.G. ———→

NOTE.—Digging can be economized by making more use of the Bastion and zig-zag traces for the fire trenches. Defences so traced, particularly if zig-zag, afford less protection.

NOTES ON DIAGRAM V

1. Diagram V shows the development of defences by a company after about six days' work. The following assumptions have been made :—

i. Priority is being given to development of continuous defences in forward company areas. Defences for reserves in rear of forward companies are to consist meanwhile of wire and weapon pits.

ii. Tracing was carried out before the troops arrived.

iii. The company has had 80 men working and doing two 4-hour tasks daily.

iv. A working party of a company of 80 men from the reserves has also done two tasks daily.

v. The work has been carried out by stages so as to be ready for attack at any moment; but has in fact been uninterrupted.

vi. The company frontage in this case is about 600 yards. (The boundaries are not shown on the Diagram.)

2. The programme of work in this example was as follows :—

Work done	4-hour tasks
i. First four hours' work (after which development of forward platoon localities appeared as in Diagram IV)—	
Weapon pits for the whole company (50) ...	50
Intermediate weapon pits and possibly weapon pits for outposts (30) ...	30
Wire (800 yards) ...	20
Clearing field of fire ...	10
Crawl trench in short lengths (250 yards) ...	50
	160
ii. Second four hours' work—	
More wire (800 yards—assuming that materials have been available) ...	20
More crawl trench (600 yards—nearly completing the front trench; and some communication trench) ...	120
Some lengths of 3-ft. deep trench (40 yards) ...	20
	160

iii. *Third four hours' work*—

More wire (800 yards)	...	...	...	20
Crawl trench (700 yards—half or more of the second trench and some more communication trench)	...	...	...	140
				160

iv. *Further 4-hour tasks* completed the work as shown on the diagram in the following order :—

- (a) More wiring and completing trench system to crawl trench depth.
- (b) Digging whole system to 3 ft. depth.
- v. Machine gun and anti-tank gun emplacements, observation posts, etc., will have been prepared simultaneously.

3. To develop a system as shown requires constant thinking ahead. Even now the work is only begun, and plans should be ready for the next stages—widening and deepening of the trenches to full dimensions, building shelters and dug-outs, further thickening of the wire, etc.

4. The defences, but not the tactical dispositions, are unavoidably visible to the air. Concealment from the enemy's ground observers has, however, been sought, and has been obtained for three of the platoon localities. (See Diagram II, Note 3). One is on a minor reverse slope, one a little inside a wood, one a little back from the brow of a hill. The left forward platoon locality is unavoidably in full view on a forward slope. It may, however, be possible to thin out, by day, the troops holding it.

5. In the original tracing of the digging the company commander, if he decentralizes to platoons, should indicate where intermediate weapon pits are to be dug, and give junction points between platoons. Usually he should himself arrange the tracing of the wire. He should also arrange the tracing of company headquarters and of main communication trenches.

6. An early decision is required as to the methods of communication with concealed isolated posts (light machine guns, machine guns, mortars, anti-tank guns, observation posts, etc.) ; and strict concealment discipline, especially as regards tracks, must be enforced.

7. When the enemy is in contact, the development of defences will still be carried out on the lines of the above

programme. Work will, however, have to be done mostly by night and its progress will consequently be delayed.

8. If the enemy is known to be unable to gain contact for a period of a few days, the rate of progress can be further accelerated, as the hours of work can be increased and development of considerable lengths of trench completed to 3 ft. without intermediate stages.

KEY TO PLATES

	Commanding Officer.		Company Serjeant-Major.
	Second-in-Command.		Company Qr.-Mr.-Serjeant.
	Adjutant.		Platoon Serjeant.
	Company Commander.		Other N.C.O.s.
	Company Second-in-Command.		Section Commander.
	Platoon Commander.		Bandmaster.
	Other Officers.		Serjeant Drummer (Bugler or Piper).
	Regimental Serjeant-Major.		Drummer (Orderly).
	Regimental Quarter-master-Serjeant.		Runner.
			Other ranks.

or Front rank.

or Rear rank.

The figures indicating intervals and distances represent paces.

PLATOON (RIFLE) DRILL FORMATIONS

FIG.1. IN LINE.

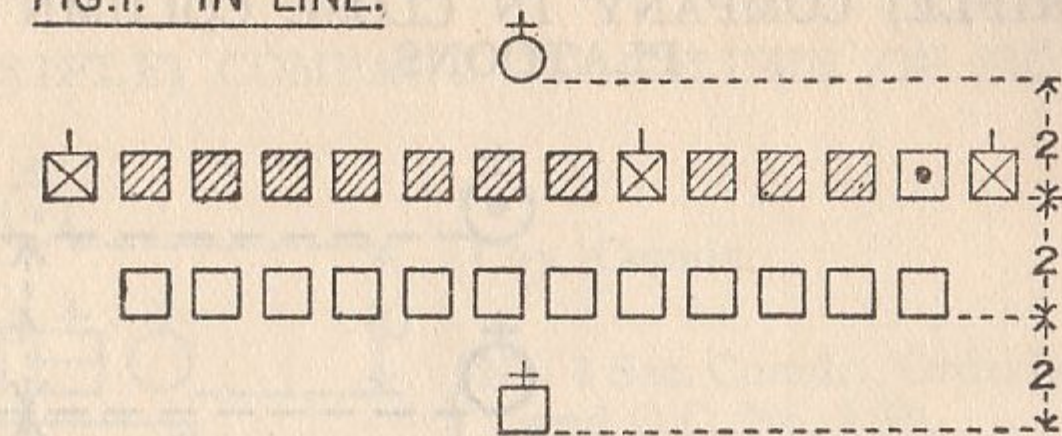
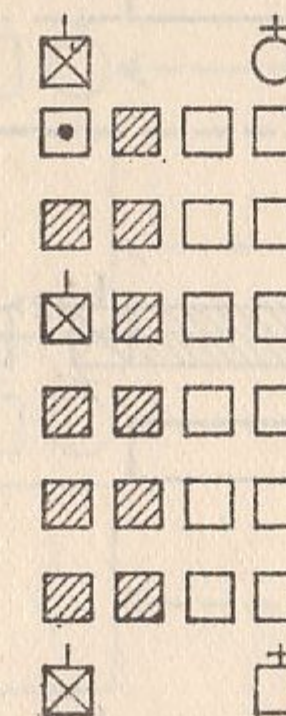
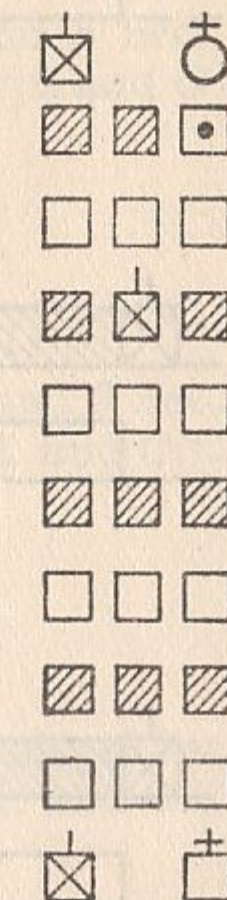


FIG.2. IN COLUMN OF ROUTE.

(a) IN FOURS



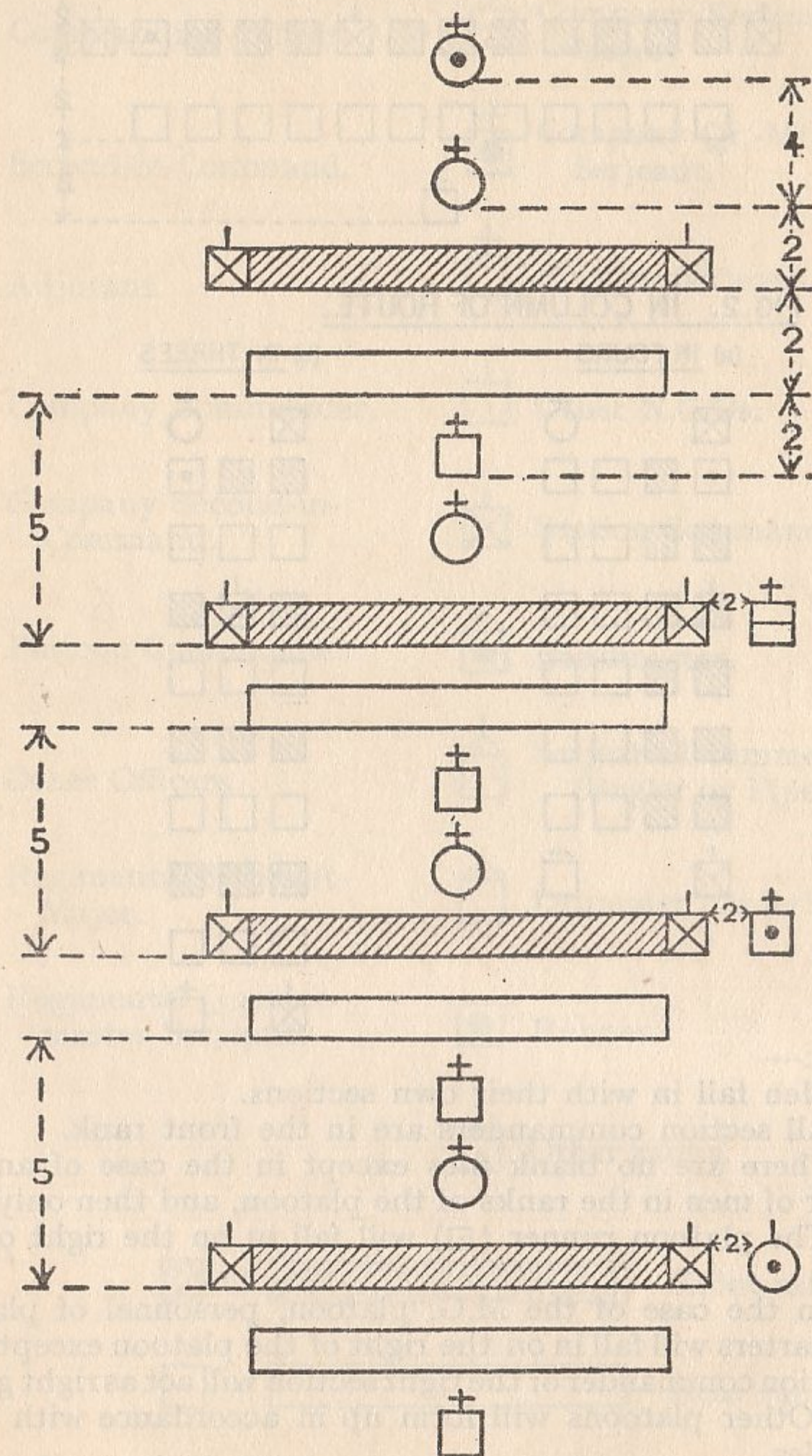
(b) IN THREES



NOTES :—

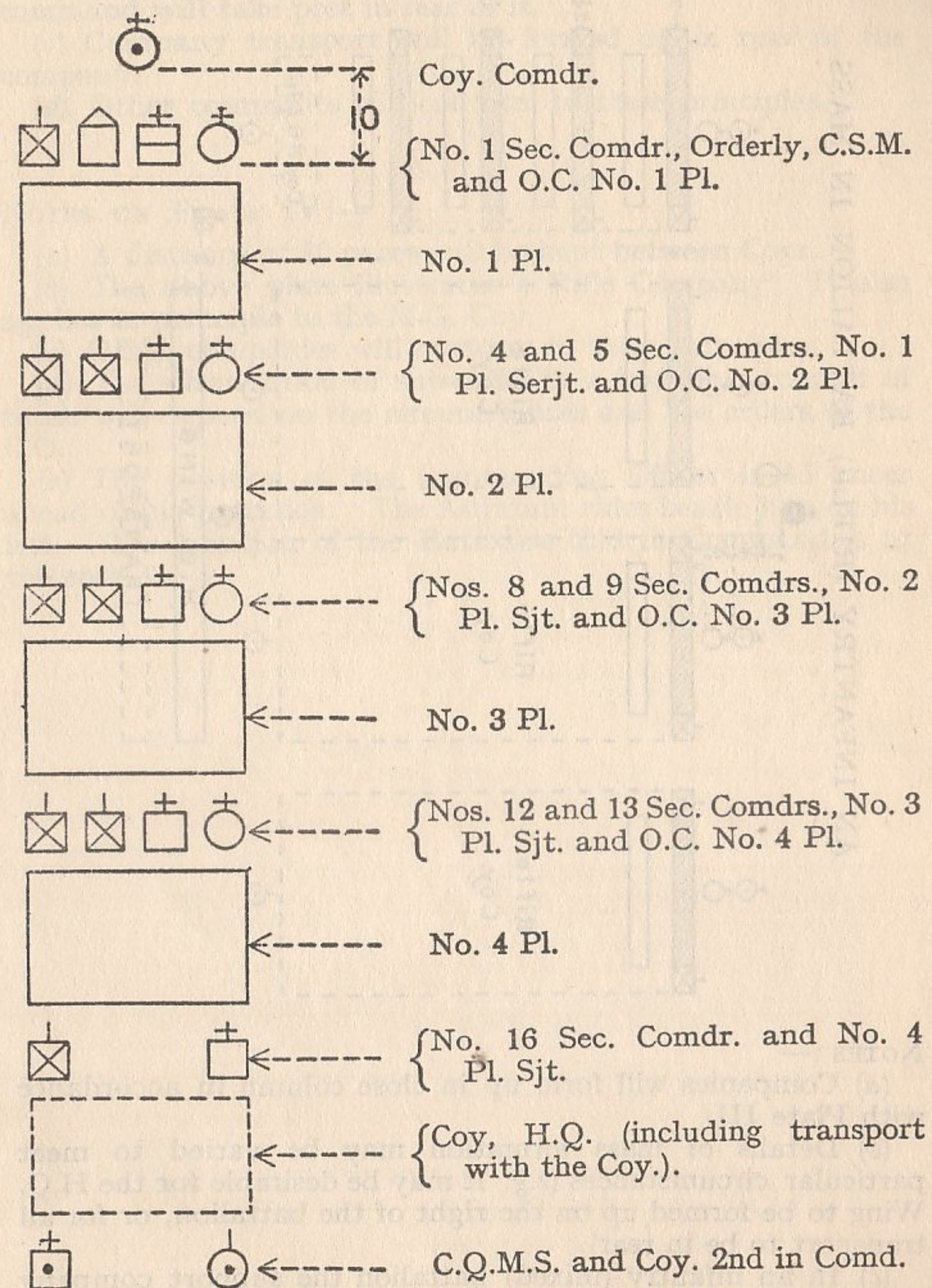
- Men fall in with their own sections.
- All section commanders are in the front rank.
- There are no blank files except in the case of an odd number of men in the ranks of the platoon, and then only one.
- The platoon runner (□) will fall in on the right of the platoon.
- In the case of the M.G. platoon, personnel of platoon headquarters will fall in on the right of the platoon except that the section commander of the right section will act as right guide.
- Other platoons will form up in accordance with these principles.
- This plate shows a platoon of three sections. When there are four sections on parade the principles in notes (a) to (f) apply equally.
- Alternatively threes may be formed with the three sections in single file behind their section commanders.

A (RIFLE) COMPANY IN CLOSE COLUMN OF PLATOONS

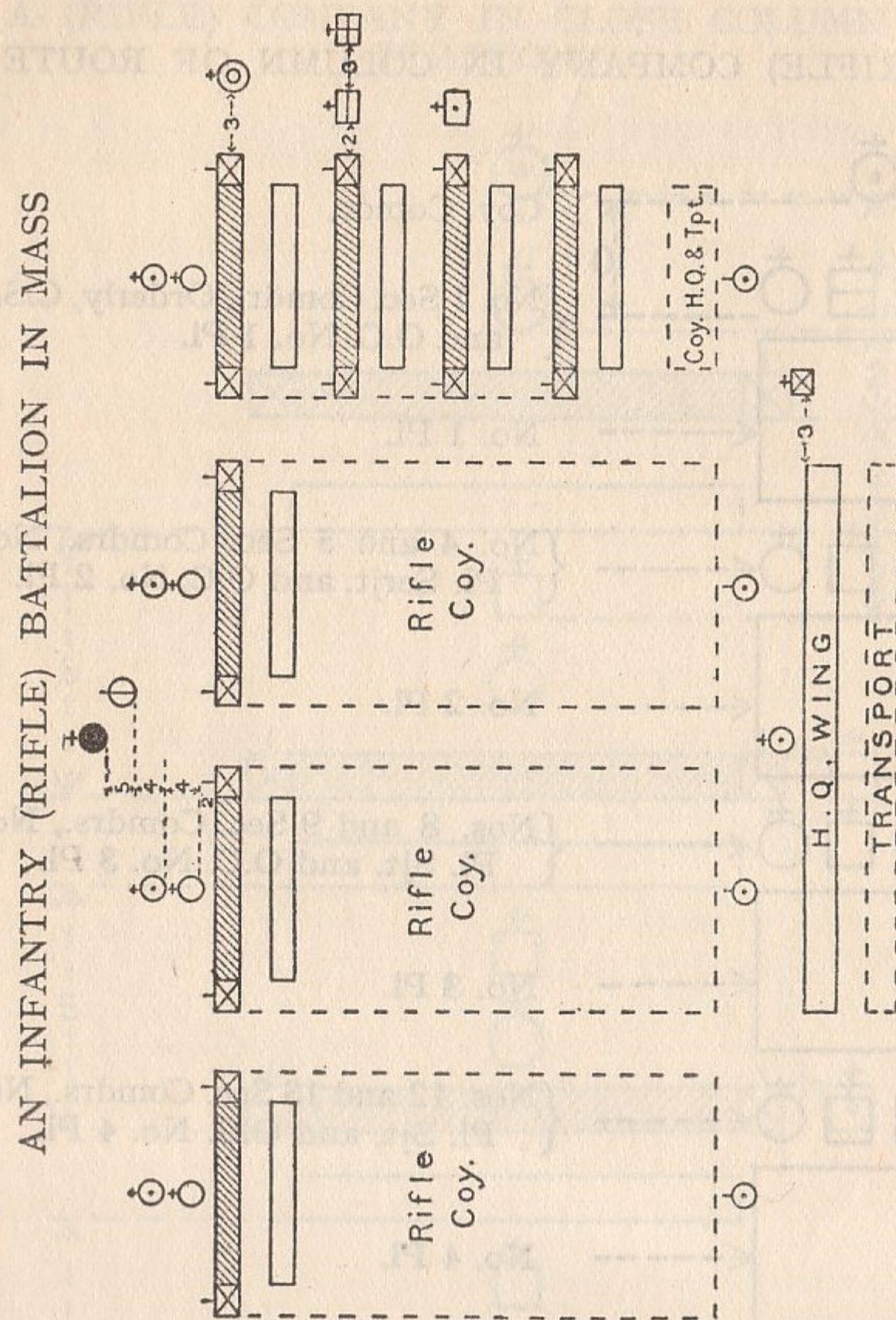


(Notes on page 241.)

A (RIFLE) COMPANY IN COLUMN OF ROUTE



(Notes on page 241.)



NOTES :—

(a) Companies will form up in close column in accordance with Plate III.

(b) Details of mass formation may be varied to meet particular circumstances (*e.g.* it may be desirable for the H.Q. Wing to be formed up on the right of the battalion, or for all transport to be in rear).

(c) In an infantry (mixed) battalion the support company will take the place of the left-hand rifle company; company transport will form up on the left of the company.

NOTES ON PLATE III :—

(a) For details of platoon formations *see* Plates II and IV.

(b) Company H.Q. if present will be formed up in rear of the centre of each company formation and the company second in command will take post in rear of it.

(c) Company transport will be formed up in rear of the company.

(d) Other companies will conform to these principles.

NOTES ON PLATE IV :—

(a) A distance of 10 paces will be kept between Coys.

(b) The above plate illustrates a Rifle Company. It also applies in principle to the M.G. Coy.

(c) Other companies will conform to these principles.

(d) The distribution of sub-units in a battalion column of route will depend on the circumstances and the orders of the C.O.

(e) The position of the Commanding Officer is 15 paces ahead of his battalion. The Adjutant rides beside him on his left. The position of the Battalion 2nd in Command is at the rear.

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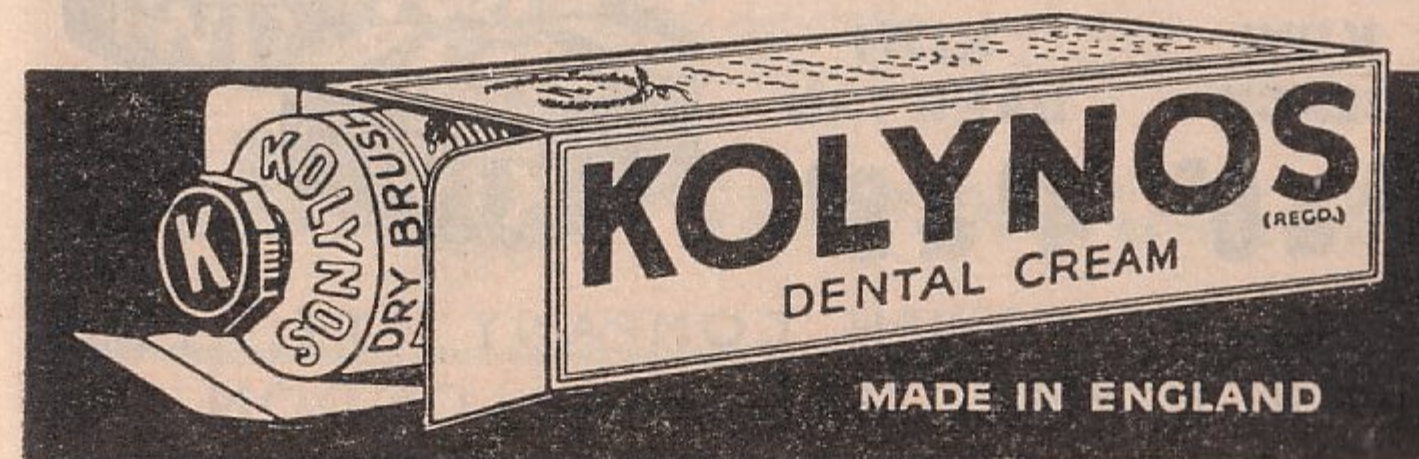


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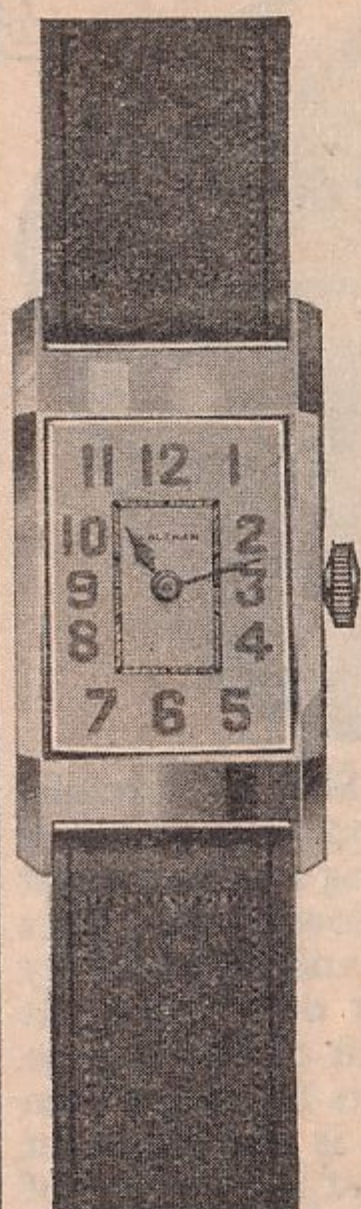
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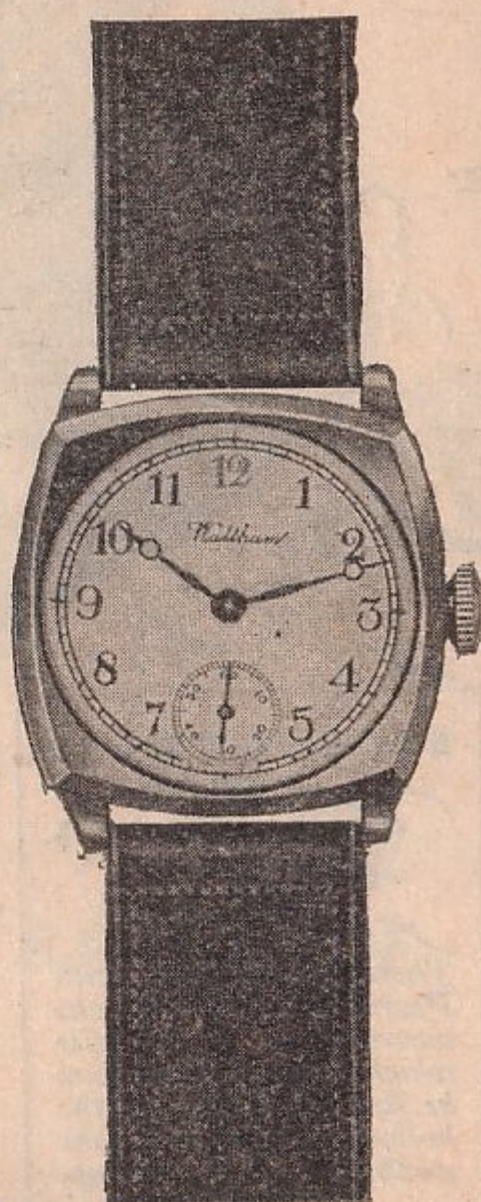
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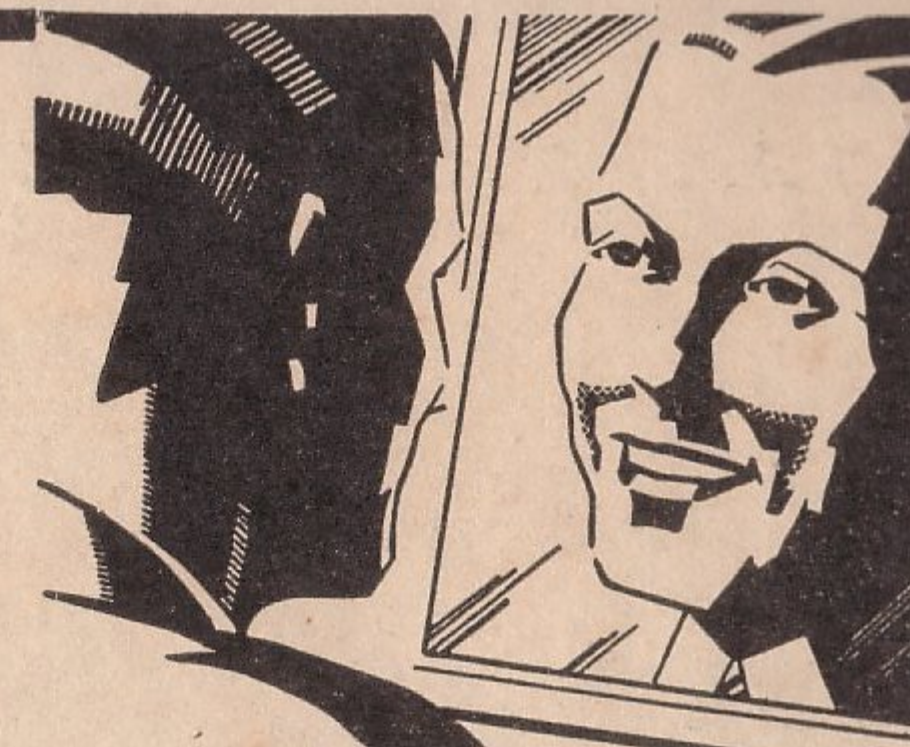


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